CHAPTER 13.0
AIR QUALITY AND CLIMATE CHANGE

This chapter describes the existing conditions pertaining to air quality and climate change and provides an overview of the applicable federal, state, and regional air quality requirements that would apply to construction, operation, and maintenance Covered Activities in the HCP Permit Area. This chapter also summarizes the federal and state regulatory programs that apply to emissions of greenhouse gases (GHGs). The evaluation in this chapter includes the potential for the implementation of the construction, operation, and maintenance Covered Activities in the HCP Permit Area to generate emissions in excess of federal de minimis thresholds, generate a significant level of GHG emissions, and expose sensitive receptors to substantial pollutant concentrations. This chapter also evaluates the potential environmental consequences that could result from each alternative discussed in Chapter 2 related to potential conflicts with applicable plans and policies.

Public and agency comments received during public scoping (CPUC 2009) included concerns regarding dust related to construction, off-roading construction activities, and blasting; use of chemicals to control dust; air quality degradation from tree removal; and the potential for an increase in chemical applications to control weeds under the right-of-way (ROW). Comments also included the proposed action's consistency with San Joaquin Valley Air Pollution Control District (SJVAPCD) Rules, including Regulation VIII (Fugitive PM_{10} Prohibitions), Rule 4102 (Nuisance), Rule 4601 (Architectural Coatings), Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving, and Pollutants), and Rule 9510 (Indirect Source Review (ISR)) as applicable.

13.1 AFFECTED ENVIRONMENT

This section describes the existing setting in the resource study area, including climatology and the existing air quality, and identifies the resources that could be affected by the proposed action or construction, operation, and maintenance Covered Activities in the HCP Permit Area. For the purposes of this analysis, the resource study area for direct effects comprises the HCP Permit Area within the San Joaquin Valley Air Basin (SJVAB). Potential sensitive receptors near the HCP Permit Area that would most directly be affected by emissions from construction equipment include schools, residences, and parks and recreational facilities. The indirect effects area comprises the SJVAB as air pollutants would travel beyond the boundary of the resource study area.

Climatology

Regional meteorological and climatological conditions influence ambient air quality. The topography of Tulare County significantly varies in elevation from its eastern to western borders,

which results in large climatic variations, ultimately affecting air quality. The western portion of Tulare County is within the low-lying valley areas of the SJVAB. The western portion of Tulare County is much dryer in comparison to the eastern portion of the county, which is located on the slopes of the Sierra Nevada. The higher elevation of the eastern portion of Tulare County contributes to both increased precipitation and a cooler climate.

The nearest climatological monitoring station to the project site is located in Visalia, California. At this station, the average daily maximum temperature is 98 degrees Fahrenheit (°F) in July, and the average daily minimum temperature is 37°F in December, according to the Western Regional Climate Center (WRCC 2013). The average precipitation in this area is about 10 inches annually, occurring primarily from November through April (WRCC 2013).

Wind direction and velocity in the eastern portion of Tulare County varies significantly from the western portion of the county. The western portion of the county primarily receives northwesterly winds. The eastern portion of the county exhibits more variable wind patterns, but the wind direction is typically up-slope during the day and down-slope in the evening. Generally, the wind direction in the eastern portion of the county is westerly; however, terrain differences can create moderate directional changes.

The geography of the mountainous areas to the east, west, and south of the SJVAB, in combination with long summers and longer winters than spring and fall, contributes to local climatic episodes that prevent the dispersion of pollutants. Although marine air generally flows into the SJVAB from the San Joaquin River Delta, the region's topographic features restrict air movement throughout the San Joaquin Valley. Additionally, the surrounding mountainous areas are generally higher in elevation than the summer inversion layers. As a result, the SJVAB is highly susceptible to pollutant accumulation over time.

Existing Air Quality in the Resource Study Area

Historically, air quality laws and regulations have divided air pollutants into two broad categories: criteria air pollutants and toxic air pollutants. Criteria air pollutants are a group of common air pollutants regulated by the federal and state governments by means of ambient standards based on criteria regarding health and/or the environmental effects of pollution and property damage. Toxic air pollutants (air toxics or toxic air contaminants) are often referred to as "non-criteria" air pollutants because ambient air quality standards have not generally been established for them. Under certain conditions, toxic air pollutants may cause adverse health effects, including cancer and/or acute and chronic non-cancer effects. With the exception of diesel particulate matter from construction equipment and truck engines, substantial emissions of other toxic air contaminants are not anticipated during construction

Covered Activities in the HCP Permit Area. Thus, specific toxic air contaminants are not discussed in the following paragraphs.

The criteria air pollutants pertinent to the analyses in this Environmental Assessment (EA) are ozone (O_3), reactive organic gases (ROGs), oxides of nitrogen (NO_x), carbon monoxide (CO), sulfur oxides (SO_x), particulate matter less than or equal to 10 microns in aerodynamic diameter (PM_{10}), and particulate matter less than or equal to 2.5 microns in aerodynamic diameter ($PM_{2.5}$), and visibility-reducing particles. Although there are no established criteria air pollutant standards for ROGs, they are regulated as O_3 precursors and are discussed below. A precursor is defined by the SJVAPCD as a directly emitted air contaminant that, when released into the atmosphere, forms, causes to be formed, or contributes to the formation of a secondary air contaminant for which an ambient air quality standard has been adopted.

The following paragraphs describe the sources and health effects for each criteria air pollutant that would potentially be emitted during the construction, operation, and maintenance Covered Activities in the HCP Permit Area. This information is based upon publications by the U.S. Environmental Protection Agency (EPA 2012a) and California Air Resources Board (CARB 2008).

Ozone (O_3)

O_3 is a strong smelling, pale blue, reactive toxic chemical gas consisting of three bonded oxygen atoms. O_3 is found in both the upper atmosphere from about 10–30 miles above the Earth's surface (stratosphere), as well as in the lower atmosphere up to about 10 miles above the Earth's surface (troposphere). Although O_3 is not directly emitted, in the lower atmosphere it forms through a photochemical reaction involving the Sun's energy and O_3 precursors, primarily NO_x and ROGs. High ozone concentrations can form over large regions when emissions from motor vehicles and stationary sources are carried hundreds of miles from their origins. While O_3 in the upper atmosphere absorbs harmful ultraviolet light, ground-level ozone is damaging to the tissues of plants, animals, and humans. O_3 reacts chemically with internal body tissues, such as the lungs, and can cause adverse effects on the human respiratory system. Prolonged exposure can reduce lung function, aggravate asthma, and increase susceptibility to respiratory infections.

Carbon Monoxide (CO)

CO is a colorless, odorless, poisonous gas, produced by incomplete burning of carbon-based fuels, including gasoline, oil, and wood. CO is also produced from incomplete combustion of many natural and synthetic products. CO as a byproduct of motor vehicle exhaust contributes to more than two-thirds of all CO emissions nationwide. When CO gets into the body, it combines with chemicals in the blood and prevents the blood from providing oxygen to cells, tissues, and organs. Because the body requires oxygen for energy, high-level exposure to CO can cause serious health effects. At high concentrations, CO can cause heart difficulties in people with chronic diseases, and can impair mental abilities. Exposure to elevated CO levels is associated

with visual impairment, reduced work capacity, reduced manual dexterity, poor learning ability, difficulty performing complex tasks, and death.

Nitrogen Dioxide (NO_2)

A brownish gas, NO_2 is a strong oxidizing agent that reacts in the air to form corrosive nitric acid, as well as toxic organic nitrates. Most NO_2, like O_3, is not directly emitted into the atmosphere but is formed by an atmospheric chemical reaction between nitric oxide (NO) and atmospheric oxygen. NO and NO_2 are collectively referred to as NO_x and are major contributors to O_3 formation. NO_x is emitted from combustion processes in which fuel is burned at high temperatures, principally from motor vehicle exhaust and stationary sources such as electric utilities and industrial boilers. NO_2 is a primary precursor to the formation of ground-level O_3, and reacts in the atmosphere to form acid rain. NO_2 is a respiratory irritant, can cause lung damage, and may affect those with existing respiratory illness, including asthma. Airborne NO_2 can also impair visibility through the formation of smog.

Particulate Matter (PM_{10} and $PM_{2.5}$)

Particulate matter pollution consists of small particles, including dust, soot, smoke, and other tiny bits of solid materials that are released into and move around in the air. PM_{10} and $PM_{2.5}$ are emitted from stationary and mobile sources, including diesel trucks and other motor vehicles, power plants, industrial processing, wood burning stoves and fireplaces, wildfires, dust from roads, construction, landfills, and agriculture, and fugitive windblown dust. Particulate matter also forms when gases emitted from motor vehicles and industrial sources undergo chemical reactions in the atmosphere. PM_{10} refers to particles less than or equal to 10 microns in aerodynamic diameter. $PM_{2.5}$ refers to particles less than or equal to 2.5 microns in aerodynamic diameter and are a subset, or portion of PM_{10}. Acute and chronic health effects associated with high particulate levels include the aggravation of chronic respiratory diseases, heart and lung disease, and coughing, bronchitis, and respiratory illnesses in children. PM_{10} and $PM_{2.5}$ can aggravate respiratory disease and cause lung damage, cancer, and premature death.

Sulfur Dioxide (SO_2)

SO_2 is a colorless, reactive gas that is produced from the burning of sulfur-containing fuels such as coal and oil, and by other industrial processes, such as production of paper and smelting of metals. SO_2 is closely related to sulfuric acid and plays an important role in the production of acid rain. SO_2 is a respiratory irritant that can cause narrowing of the airways leading to wheezing and shortness of breath. Long-term exposure to SO_2 can cause respiratory illness and aggravate existing cardiovascular disease. Sulfur oxides are collectively referred to as SO_x.

Reactive Organic Gases (ROGs)

Hydrocarbons are organic gases that are formed solely of hydrogen and carbon. Hydrocarbons that contribute to formation of O_3 are referred to as ROGs (also referred to as volatile organic compounds (VOCs)). Combustion engine exhaust, oil refineries, and fossil-fueled power plants are the sources of hydrocarbons. Other sources of hydrocarbons include evaporation from petroleum fuels, solvents, dry cleaning solutions, and paint.

The primary health effects of hydrocarbons result from the formation of ozone and its related health effects. High levels of hydrocarbons in the atmosphere can interfere with oxygen intake by reducing the amount of available oxygen through displacement. Carcinogenic forms of hydrocarbons, such as benzene, are considered toxic air contaminants. There are no separate health standards for ROGs.

Sensitive Receptors

The SJVAPCD identifies a sensitive receptor as a location where human populations, especially children, senior citizens, and sick persons, are present, and where there is a reasonable expectation of continuous human exposure to pollutants, according to the averaging period for ambient air quality standards, such as 24-hour, 8-hour, or 1-hour standards. Sensitive receptors include residences, schools, playgrounds, childcare centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes. Industrial and commercial uses are not considered sensitive receptors.

Regional Air Quality

The HCP Permit Area is located within northwestern Tulare County and traverses through a small portion of the City of Visalia within the SJVAB. The EPA has designated the SJVAB as a nonattainment area for the federal 8-hour ozone standard, and CARB has designated the SJVAB as a nonattainment area for the state 1-hour and 8-hour ozone standards. The air basin has been designated as a nonattainment area for the state 24-hour and annual PM_{10} standards. The SJVAB is designated as a nonattainment area for the federal 24-hour and annual $PM_{2.5}$ standards and as a nonattainment area for the state annual $PM_{2.5}$ standard. The air basin is designated as unclassified or attainment for all other criteria air pollutants. The status of the air basin with respect to the National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) is summarized in Tables 13-1 and 13-2, respectively.

Table 13-1
NAAQS and Status
San Joaquin Valley Air Basin (Tulare County)

Pollutant	Averaging Time	Designation/Classification
Ozone (O_3)	8 hours	Nonattainment/Extreme
Nitrogen dioxide (NO_2)	1 hour, annual arithmetic mean	Unclassifiable/Attainment
Carbon monoxide (CO)	1 hour, 8 hours	Unclassifiable/Attainment
Sulfur dioxide (SO_2)	24 hours, annual arithmetic mean	Unclassifiable
Respirable particulate matter (PM_{10})	24 hours	Attainment/Maintenance
Fine particulate matter ($PM_{2.5}$)	24 hours, annual arithmetic mean	Nonattainment
Lead (Pb)	Rolling 3-month average	Unclassifiable/Attainment

Source: EPA 2012b.

Table 13-2
CAAQS and Status
San Joaquin Valley Air Basin (Tulare County)

Pollutant	Averaging Time	Designation/Classification
Ozone (O_3)	1 hour, 8 hours	Nonattainment[1]
Nitrogen dioxide (NO_2)	1 hour, Annual	Attainment
Carbon monoxide (CO)	1 hour, 8 hours	Attainment
Sulfur dioxide (SO_2)	1 hour, 24 hours	Attainment
Respirable particulate matter (PM_{10})	24 hours, annual arithmetic mean	Nonattainment
Fine particulate matter ($PM_{2.5}$)	Annual arithmetic mean	Nonattainment
Lead (Pb)[2]	30-day average	Attainment
Sulfates (SO_4)	24 hours	Attainment
Hydrogen sulfide (H_2S)	1 hour	Unclassified
Vinyl chloride[2]	24 hours	Unclassified
Visibility-reducing particles	8 hours (10:00 a.m.–6:00 p.m.)	Unclassified

Source: CARB 2012a.
Notes:
[1] CARB has not issued area classification based on the state 8-hour standard. The previous classification for the 1-hour O_3 standard was "Severe."
[2] CARB has identified Pb, vinyl chloride, and toxic air contaminants with no threshold level of exposure for adverse health effects determined.

Local Air Quality

The SJVAPCD maintains ambient air quality monitoring stations throughout the SJVAB. All air pollutants are not monitored at each station; thus, data from the closest representative station that monitors a specific pollutant are summarized. The closest ambient air quality monitoring station to the HCP Permit Area is the Visalia–N. Church Street station, located approximately 3 miles west of the north–south portion of the HCP Permit Area, which measures O_3, NO_2, PM_{10}, and $PM_{2.5}$. For CO, values from the Fresno–Drummond Street monitoring station, approximately 34 miles northwest of the HCP Permit Area, were used in this analysis. For SO_2, values from the

Fresno–First Street monitoring station, approximately 39 miles northwest of the HCP Permit Area, were used in this analysis. The most recent background ambient air quality data from 2008–2012 are presented in Table 13-3. The number of days exceeding the ambient air quality standards is shown in Table 13-4.

Table 13-3
Peak Background Concentrations in the Resource Study Area for the Period of 2008–2012

Averaging Period	Monitoring Station	Ambient Air Quality Standard	2008	2009	2010	2011	2012
Ozone							
Maximum 1-hour concentration	Visalia–N. Church Street	0.09 ppm	0.130	0.120	0.122	0.119	0.111
Maximum 8-hour concentration		0.070 ppm (state)	0.122	0.093	0.104	0.084	0.094
		0.075 ppm (federal)	0.121	0.092	0.104	0.083	0.094
Nitrogen Dioxide							
Maximum 1-hour concentration	Visalia–N. Church Street	0.18 ppm (state) 0.100 ppm (federal)	0.077	0.068	0.077	0.058	0.053
Annual concentration		0.030 ppm (state) 0.053 ppm (federal)	0.014	0.015	0.013	0.012	ND
Carbon Monoxide							
Maximum 1-hour concentration	Fresno–Drummond Street	20 ppm (state) 35 ppm (federal)	3.2	3.1	2	2.8	2.9
Maximum 8-hour concentration		9.0 ppm (state)	2.14	1.95	1.45	1.73	ND
		9 ppm (federal)	2.14	1.95	1.45	1.73	1.8
Respirable Particulate Matter (PM_{10})							
Maximum 24-hour conc. (state method)	Visalia–N. Church Street	50 μg/m³	104.7	93.2	88.3	76.6	76.2
Maximum 24-hour conc. (federal method)		150 μg/m³	103.9	92.1	90.8	78.1	75.7
Annual concentration (state method)		20 μg/m³	47.3	41.8	34.0	34.0	38.1
Fine Particulate Matter ($PM_{2.5}$)							
Maximum 24-hour conc. (federal method)	Visalia–N. Church Street	35 μg/m³	68.2	63.5	59.8	73.2	76.2
Annual concentration (state method)		12 μg/m³	88.5	74.5	61.6	73.2	76.2
Annual concentration (federal method)		15.0 μg/m³	19.8	16.0	13.5	16.0	14.7

Table 13-3
Peak Background Concentrations in the Resource Study Area for the Period of 2008–2012

Averaging Period	Monitoring Station	Ambient Air Quality Standard	2008	2009	2010	2011	2012
Sulfur Dioxide							
Maximum 1-hour concentration	Fresno–First Street	0.075 ppm (federal)	0.012	0.013	0.015	0.016	ND
Maximum 24-hour concentration		0.04 ppm (state)	0.003	0.005	0.004	0.004	ND
Annual concentration		0.030 ppm (federal)	0.001	0.001	0.000	0.000	ND

Sources: CARB 2013a; EPA 2013a.
Notes:
ND = insufficient data available to determine value
ppm = parts per million. $\mu g/m^3$ = micrograms per cubic meter.

Table 13-4
Frequency of Air Quality Standard Violations

Monitoring Site	Year	Number of Days Exceeding Standard				
		State 1-Hour O_3	*State 8-Hour O_3*	*Federal 8-Hour O_3*	*State 24-Hour PM_{10}[a]*	*Federal 24-Hour $PM_{2.5}$[a]*
Visalia–N. Church Street	2007	11	56	31		
	2008	44	94	60		
	2009	23	68	48		
	2010	15	57	34		
	2011	4	33	17		
	2012	9	60	37		
Visalia–N. Church Street	2007				91.4 (15)	
	2008				160.8(26)	
	2009				121.3 (20)	
	2010				59.4 (10)	
	2011				68.8 (11)	
	2012				89.3 (15)	
Visalia–N. Church Street	2007					60.4 (18)
	2008					52.3 (17)
	2009					23.9 (8)
	2010					8.9 (3)
	2011					27.9 (9)
	2012					22.0 (7)

Source: CARB 2013a.
Note:
[a] Measurements of PM_{10} and $PM_{2.5}$ are usually collected every 6 days and 3 days, respectively. "Number of days exceeding the standards" are mathematical estimates of the number of days concentrations would have been greater than the level of the standard had each day been monitored. The numbers in parentheses are the measured number of samples that exceeded the standard.

Global Climate Change

The Earth's climate has undergone many changes during its history, ranging from ice ages to long periods of warmth. Natural factors such as volcanic eruptions, changes in the Earth's orbit, and the amount of energy from the Sun have affected global temperatures and thus the Earth's climate. "Climate change refers to any significant change in measures of climate (such as temperature, precipitation, or wind) lasting for an extended period (decades or longer)" (EPA 2011a). The term "climate change" is often used interchangeably with the term "global warming." However, "climate change" is preferred as it helps convey that there are other changes in addition to rising temperatures.

The Greenhouse Effect and Greenhouse Gases

Heat retention within the atmosphere is an essential process to sustain life on Earth. The natural process through which heat is retained in the troposphere[1] is called the "greenhouse effect." The greenhouse effect traps heat in the troposphere through a threefold process: short-wave radiation emitted by the Sun is absorbed by the Earth; the Earth emits a portion of this energy in the form of long-wave radiation; and GHGs in the upper atmosphere absorb this long-wave radiation and emit this long-wave radiation into space and toward the Earth. This "trapping" of the long-wave (thermal) radiation emitted back toward the Earth is the underlying process of the greenhouse effect. This natural process contributes to regulating the Earth's temperature, without which the temperature of the Earth would be about 0°F (-18 degrees Celsius (°C)) instead of its present 57°F (14°C) (NCDC 2012).

Gases that trap heat in the atmosphere are often called "greenhouse gases" (GHGs). Principal GHGs include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), O_3, and water vapor. Some GHGs, such as CO_2, CH_4, and N_2O, occur naturally and are emitted into the atmosphere through natural processes and human activities. Emissions of CO_2 are largely byproducts of fossil-fuel combustion, whereas CH_4 results mostly from off-gassing associated with agricultural practices and landfills. Man-made GHGs, which have a much greater heat-absorption potential than CO_2, include fluorinated gases, such as hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), and nitrogen trifluoride (NF_3), which are associated with certain industrial products and processes. The major GHGs emitted by human activities remain in the atmosphere for periods ranging from decades to centuries; therefore, it is virtually certain that atmospheric concentrations of GHGs will continue to rise over the next few decades (EPA 2011b).

It is generally agreed that human activity has been increasing the concentration of GHGs in the atmosphere (mostly CO_2 from combustion of coal, oil, and gas, and a few other trace gases)

[1] The troposphere is the bottom layer of the atmosphere, which varies in height from the Earth's surface to 10–12 kilometers.

(NCDC 2012). The global atmospheric concentration of CO_2 has increased from a pre-industrial value of about 280–379 parts per million (ppm) in 2005 (IPCC 2007). A warming trend of approximately 1.0–1.7°F occurred during the twentieth century; warming occurred in both the northern and southern hemispheres and over the oceans (IPCC 2007). Most warming in recent decades is very likely the result of human activities (IPCC 2007).

The effect each GHG has on climate change is measured as a combination of the volume or mass of its emissions, plus the potential of a gas or aerosol to trap heat in the atmosphere, known as its global warming potential (GWP). The GWP varies between GHGs; for example, the GWP of CH_4 is 21, and the GWP of N_2O is 310. Total GHG emissions are expressed as a function of how much warming would be caused by the same mass of CO_2. Thus, GHG emissions are typically measured in terms of pounds or tons of carbon dioxide equivalent (CO_2E).[2]

Contributions to Greenhouse Gas Emissions

In 2011, the United States produced 6,702 million metric tons of CO_2E (MMT CO_2E) (EPA 2013b). The primary GHG emitted by human activities in the United States was CO_2, representing approximately 84% of total GHG emissions. The largest source of CO_2, and of overall GHG emissions, was fossil-fuel combustion.

According to the 2010 GHG inventory data compiled by CARB for the California Greenhouse Gas Inventory for 2000–2010, California emitted 451.61 metric tons of CO_2E (MT CO_2E) of GHGs, including emissions resulting from out-of-state electrical generation (CARB 2013b). The primary contributors to GHG emissions in California are transportation, electric power production from both in-state and out-of-state sources, industry, agriculture and forestry, and other sources, which include commercial and residential activities. These primary contributors to California's GHG emissions and their relative contributions in 2010 are presented in Table 13-5.

Table 13-5
GHG Sources in California

Source Category	Annual GHG Emissions (MMT CO_2E)	% of Total
Agriculture	32.45	7.19%
Commercial and residential	43.89	9.72%
Electricity generation	93.30	20.66%
Forestry (excluding sinks)	0.19	0.00%
Industrial uses	85.96	19.03%
Recycling and waste	6.98	1.55%

[2] The CO_2 equivalent for a gas is derived by multiplying the mass of the gas by the associated GWP, such that MT CO_2E = (metric tons of a GHG) x (GWP of the GHG). For example, the GWP for CH_4 is 21. This means that emissions of 1 metric ton of methane are equivalent to emissions of 21 metric tons of CO_2.

Table 13-5
GHG Sources in California

Source Category	Annual GHG Emissions (MMT CO_2E)	% of Total
Transportation	173.18	38.35%
High-GWP substances	15.66	3.47%
Total	451.61	100.00%[a]

Source: CARB 2013b.
Note:
[a] Percentage has been rounded.

Potential Effects of Human Activity on Climate Change

The primary effect of global climate change has been a rise in average global tropospheric temperature of 0.2°C per decade, determined from meteorological measurements worldwide between 1990 and 2005. Scientific modeling predicts that continued emissions of GHGs at or above current rates would induce more extreme climate changes during the twenty-first century than were observed during the twentieth century. A warming of about 0.2°C (0.36°F) per decade is projected, and there are identifiable signs that global warming could be taking place, including substantial ice loss in the Arctic (IPCC 2007).

Although climate change is driven by global atmospheric conditions, climate change impacts are felt locally. Climate change is already affecting California: Average temperatures have increased, leading to more extreme hot days and fewer cold nights; shifts in the water cycle have been observed, with less winter precipitation falling as snow, and both snowmelt and rainwater running off earlier in the year; sea levels have risen; and wildland fires are becoming more frequent and intense due to dry seasons that start earlier and end later (CAT 2010). These climate-driven changes affect resources critical to the health and prosperity of California. Climate change modeling using emission rates from the year 2000 shows that further warming would occur, which would induce further changes in the global climate system during the current century. Changes to the global climate system and ecosystems and to California would include, but would not be limited to, the following:

- The loss of sea ice and mountain snowpack resulting in higher sea levels and higher sea surface evaporation rates with a corresponding increase in tropospheric water vapor due to the atmosphere's ability to hold more water vapor at higher temperatures (IPCC 2007)
- A rise in global average sea level primarily due to thermal expansion and melting of glaciers and ice caps and the Greenland and Antarctic ice sheets (IPCC 2007)
- Changes in weather that include widespread changes in precipitation, ocean salinity, and wind patterns; and more energetic aspects of extreme weather, including droughts, heavy precipitation, heat waves, extreme cold, and intensity of tropical cyclones (IPCC 2007)

- A decline of Sierra snowpack, which accounts for approximately half of the surface water storage in California, by 30% to as much as 90% over the next 100 years (CAT 2006)
- An increase in the number of days conducive to O_3 formation by 25% to 85% (depending on the future temperature scenario) in high-O_3 areas of Los Angeles and the San Joaquin Valley by the end of the twenty-first century (CAT 2006)
- A high potential for erosion of California's coastlines and seawater intrusion into the Delta and levee systems due to the rise in sea level (CAT 2006).

13.2 IMPACT ANALYSIS REGULATORY FRAMEWORK

13.2.1 Air Quality

Federal Regulations

The following federal regulations pertaining to air quality would apply to the proposed action.

Clean Air Act

The federal Clean Air Act, passed in 1970 and last amended in 1990, forms the basis for the national air pollution control effort. The EPA is responsible for implementing most aspects of the Clean Air Act, including the setting of NAAQS for major air pollutants, hazardous air pollutant standards, approval of state attainment plans, motor vehicle emission standards, stationary source emission standards and permits, acid rain control measures, stratospheric ozone protection, and enforcement provisions. The NAAQS are established for "criteria pollutants" under the Clean Air Act, which are O_3, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and lead.

The NAAQS describe acceptable air quality conditions designed to protect the health and welfare of the citizens of the nation. The NAAQS (other than for O_3, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and those based on annual averages or arithmetic mean) are not to be exceeded more than once per year. The NAAQS for O_3, NO_2, SO_2, PM_{10}, $PM_{2.5}$ are based on statistical calculations over 1–3-year periods, depending on the pollutant. The NAAQS are presented in Table 13-6. The Clean Air Act requires the EPA to reassess the NAAQS at least every 5 years to determine whether adopted standards are adequate to protect public health based on current scientific evidence. States with areas that exceed the NAAQS must prepare a state implementation plan (SIP) that demonstrates how those areas will attain the standards within mandated time frames.

The federal Clean Air Act delegates the regulation of air pollution control and the enforcement of the NAAQS to the states. In California, the task of air quality management and regulation has been legislatively granted to CARB, with subsidiary responsibilities assigned to air quality management districts and air pollution control districts at the regional and county levels.

Under Section 176(c)(1) of the federal Clean Air Act, federal agencies that "engage in, support in any way or provide financial assistance for, license or permit, or approve any activity"[3] must demonstrate that such actions do not interfere with state and local plans to bring an area into attainment with the NAAQS. Specifically, the SJVAB is designated as nonattainment with respect to the NAQQS for ozone and $PM_{2.5}$ and as a maintenance area for PM_{10}. The program by which a federal agency determines that its action would not obstruct or conflict with air quality attainment plans is called "general conformity." The implementing regulations for general conformity are found in Title 40, Code of Federal Regulations, Part 93, Subpart B. In addition, the SJVAPCD has incorporated by reference the federal general conformity regulations as Rule 9110 (General Conformity).

State Regulations

The following California regulations pertaining to air quality would apply to the proposed action.

California Air Resources Board

CARB, which became part of the California Environmental Protection Agency (CalEPA) in 1991, is responsible for ensuring implementation of the California Clean Air Act of 1988, responding to the federal Clean Air Act, and regulating emissions from motor vehicles and consumer products.

CARB has established CAAQS, which are generally more restrictive than the NAAQS, consistent with the federal Clean Air Act, which requires state regulations to be at least as restrictive as the federal requirements. The CAAQS describe adverse conditions; that is, pollution levels must be below these standards before a basin can attain the standard. The CAAQS for O_3, CO, SO_2 (1-hour and 24 hours), NO_2, PM_{10}, and $PM_{2.5}$ and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. The CAAQS are presented in Table 13-6.

Table 13-6
Ambient Air Quality Standards

Pollutant	Average Time	California Standards[1]	National Standards[2]	
		Concentration[3]	*Primary*[3,4]	*Secondary*[3,5]
O_3	1 hour	0.09 ppm (180 μg/m³)	—	Same as Primary Standard
	8 hours	0.070 ppm (137 μg/m³)	0.075 ppm (147 μg/m³)	
NO_2	1 hour	0.18 ppm (339 μg/m³)	0.100 ppm (188 μg/m³)	Same as Primary Standard
	Annual Arithmetic Mean	0.030 ppm (57 μg/m³)	0.053 ppm (100 μg/m³)	
CO	1 hour	20 ppm (23 mg/m³)	35 ppm (40 mg/m³)	None
	8 hours	9.0 ppm (10 mg/m³)	9 ppm (10 mg/m³)	

[3] Title 40, Code of Federal Regulations, Part 93, Section 93.150(a).

Table 13-6
Ambient Air Quality Standards

Pollutant	Average Time	California Standards[1]	National Standards[2]	
		Concentration[3]	*Primary*[3,4]	*Secondary*[3,5]
SO_2	1 hour	0.25 ppm (655 μg/m³)	0.075 ppm (196 μg/m³)	—
	3 hours	—	—	0.5 ppm (1300 μg/m³)
	24 hours	0.04 ppm (105 μg/m³)	0.14 ppm (for certain areas)	—
	Annual Arithmetic Mean	—	0.030 ppm (for certain areas)	—
PM_{10}	24 hours	50 μg/m³	150 μg/m³	Same as Primary Standard
	Annual Arithmetic Mean	20 μg/m³	—	
$PM_{2.5}$	24 hours	—	35 μg/m³	Same as Primary Standard
	Annual Arithmetic Mean[6]	12 μg/m³	12.0 μg/m³	15.0 μg/m³
Lead[7]	30-day Average	1.5 μg/m³	—	
	Calendar Quarter	—	1.5 μg/m³ (for certain areas)	Same as Primary Standard
	Rolling 3-Month Average	—	0.15 μg/m³	
Hydrogen sulfide	1 hour	0.03 ppm (42 μg/m³)	—	—
Vinyl chloride	24 hours	0.01 ppm (26 μg/m³)	—	—
Sulfates	24 hours	25 μg/m³	—	—
Visibility-reducing particles	8-hour (10:00 a.m. to 6:00 p.m. PST)	In sufficient amount to produce an extinction coefficient of 0.23 per kilometer due to particles when the relative humidity is less than 70%	—	—

Source: CARB 2012b.

ppm = parts per million by volume. μg/m³ = micrograms per cubic meter. mg/m³= milligrams per cubic meter.

1 California standards for O_3, CO, SO_2 (1-hour and 24-hour), NO_2, suspended particulate matter (PM_{10}, $PM_{2.5}$), and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. CAAQS are listed in the standards in Section 70200 of Title 17 of the California Code of Regulations.

2 National standards (other than O_3, NO_2, SO_2, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The O_3 standard is attained when the fourth-highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. For NO_2 and SO_2, the standard is attained when the 3-year average of the 98th and 99th percentile, respectively, of the daily maximum 1-hour average at each monitor within an area does not exceed the standard (effective April 12, 2010). For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 micrograms per cubic meter (μg/m³) is equal to or less than 1. For $PM_{2.5}$, the 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standard.

3 Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based on a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm (parts per million) in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

4 National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.

5 National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

6 On December 14, 2012, the EPA Administrator signed the notice of final rule revising the annual $PM_{2.5}$ standard from 15.0–12.0 μg/m³. The final rule has not been published in the Federal Register as of the date of this report, and an effective date for the ruling has not been set.

7 CARB has identified lead and vinyl chloride as toxic air contaminants with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

Applicable CARB Regulations

The following CARB regulations will be applicable to sources in the HCP Permit Area.

Idling of Commercial Heavy Duty Trucks (13 CCR 2485)

In July 2004, CARB adopted an Airborne Toxic Control Measure (ATCM) to control emissions from idling trucks. The ATCM prohibits idling for more than 5 minutes for all commercial trucks with a gross vehicle weight rating over 10,000 pounds. The ATCM contains an exception that allows trucks to idle while queuing or involved in operational activities.

In-Use Off-Road Diesel-Fueled Fleets (13 CCR 2449 et seq.)

In July 2007, CARB adopted an ATCM for in-use off-road diesel vehicles. This regulation required that specific fleet average requirements are met for NO_x emissions, for particulate matter emissions, and other criteria pollutant emissions from in-use off-road diesel-fueled vehicles. Where average requirements cannot be met, Best Available Control Technology (BACT) requirements apply. The Executive Officer approved amendments to the regulation on October 28, 2011 (effective December 14, 2011).

In-Use On-Road Diesel-Fueled Vehicles (13 CCR 2025)

On December 12, 2008, CARB adopted an ATCM to reduce NO_x and particulate matter emissions from most in-use on-road diesel trucks and buses with a gross vehicle weight rating (GVWR) greater than 14,000 pounds. The original ATCM regulation required fleets of on-road trucks to limit their NO_x and particulate matter emissions through a combination of exhaust retrofit equipment and new vehicles. In December 2009, the CARB Governing Board directed staff to evaluate amendments that would provide additional flexibility for fleets adversely affected by the poor California economy. On December 17, 2010, CARB revised this ATCM to delay its implementation along with limited relaxation of its requirements. The Executive Officer approved additional amendments to the regulations on September 19, 2011 (effective December 14, 2011).

Local Regulations

The following local/regional regulations pertaining to air quality would apply to the proposed action.

San Joaquin Valley Air Pollution Control District

While CARB is responsible for the regulation of mobile emission sources within the state, local air quality management districts and air pollution control districts are responsible for enforcing standards and regulating stationary sources. The SJVAPCD is the regional agency responsible for the regulation and enforcement of federal, state, and local air pollution control regulations in

the SJVAB, where the HCP Permit Area is located. The SJVAPCD operates monitoring stations in the SJVAB, develops rules and regulations for stationary sources and equipment, prepares emissions inventory and air quality management planning documents, and conducts source testing and inspections. The SJVAPCD's air quality management plans include control measures and strategies to be implemented to attain state and federal ambient air quality standards in the SJVAB. The SJVAPCD then implements these control measures as regulations to control or reduce criteria pollutant emissions from stationary sources or equipment.

SJVAPCD Attainment Plans

Extreme 1-Hour Ozone Attainment Demonstration Plan

This plan, adopted by the SJVAPCD board in 2004, sets forth measures and emission reduction strategies designed to attain the federal 1-hour ozone standard by November 15, 2010, as well as an emissions inventory, outreach, and Rate of Progress demonstration. This plan was approved by the EPA on March 8, 2010; however, the EPA's approval was subsequently withdrawn effective November 26, 2012, in response to a decision issued by the U.S. Court of Appeals for the Ninth Circuit (*Sierra Club v. EPA*, 671 F.3d 955) remanding EPA's approval of these SIP revisions. Concurrent with EPA's final rule, CARB is withdrawing the 2004 plan. The SJVAPCD will be developing a new plan for the 1-hour ozone standard, which it expects to submit to EPA by June 2013.

2007 8-Hour Ozone Plan

This plan sets forth measures and a "dual path" strategy to attain the federal 8-hour ozone standard for the SJVAB by reducing emissions on ozone and particulate matter precursors. The plan also includes provisions for improved pollution control technologies for mobile and stationary sources, as well as an increase in state and federal funding for incentive-based measures to reduce emissions. All local measures would be adopted by the SJVAPCD before 2012. This plan was approved by the EPA on March 1, 2012. On November 26, 2012, however, the EPA withdrew its determination that the plan satisfied the Clean Air Act requirements regarding emission growth caused by growth in vehicle-miles traveled. All other determinations in the EPA's March 1, 2012, rule approving the plan remain unchanged and in effect.

2007 PM_{10} Maintenance Plan

On October 25, 2007, CARB approved the SJVAPCD's 2007 PM_{10} Maintenance Plan and Request for Redesignation with modifications to the transportation conformity budgets. On September 25, 2008, the EPA redesignated the SJVAB to attainment for the PM_{10} NAAQS and approved the PM_{10} maintenance plan.

2008 $PM_{2.5}$ Plan

The SJVAPCD Governing Board adopted the 2008 $PM_{2.5}$ plan on April 30, 2008. This plan is designed to assist the SJVAB in attaining all $PM_{2.5}$ standards, including the 1997 federal standards, the 2006 federal standards, and the state standard, as soon as possible. On July 13, 2011, the EPA issued a proposed rule partially approving and disapproving the 2008 $PM_{2.5}$ plan. Subsequently, on November 9, 2011, the EPA issued a final rule approving most of the plan with an effective date of January 9, 2012. However, the EPA disapproved the plan's contingency measures because they would not provide sufficient emission reductions.

SB 656 Particulate Matter Control Measure Implementation Schedule

Senate Bill (SB) 656 was enacted in 2003 and codified as Health and Safety Code Section 39614. SB 656 seeks to reduce exposure to PM_{10} and $PM_{2.5}$ and to make further progress toward attainment of the NAAQS and CAAQS for PM_{10} and $PM_{2.5}$. SB 656 required CARB, in consultation with local air districts, to develop and adopt lists of "the most readily available, feasible, and cost-effective" particulate matter control measures. Subsequently, the air districts were required to adopt implementation schedules for the relevant control measures in their district. In June 2005, the SJVAPCD adopted its SB 656 Particulate Matter Control Measure Implementation Schedule.

Applicable SJVAPCD Regulations

The following SJVAPCD rules will be applicable to sources in the HCP Permit Area.

Rule 4101 (Visible Emissions)

Rule 4101 prohibits emissions of visible air contaminants from any potential source of air contaminants. The rule prohibits air contaminants, other than water vapor, that are a certain level of darkness or opacity from being discharged for a combined period of more than 3 minutes of any hour.

Rule 4102 (Nuisance)

To protect the public health, Rule 4102 prohibits any person from discharging such quantities of air contaminants that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public.

Rule 4601 (Architectural Coatings**)**

Rule 4601 limits VOCs from architectural coatings. This rule specifies architectural coatings storage, cleanup, and labeling requirements.

Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving, and Pollutants)

Asphalt paving operations in the HCP Permit Area will be subject to Rule 4641. This rule applies to the manufacture and use of cutback asphalt, slow cure asphalt, and emulsified asphalt for paving and maintenance operations.

Regulation VIII (Fugitive PM_{10} Prohibition) – Rules 8011, 8021, 8031, 8041, 8051, 8061, and 8071

The rules under Regulation VIII are intended to reduce ambient concentrations of fine particulate matter (PM_{10} or larger) and have been developed pursuant to EPA guidance for Serious PM_{10} Nonattainment Areas. These rules are applicable to specified anthropogenic fugitive dust sources. Administrative requirements, such as recordkeeping requirements and test methods, apply.

- Rule 8011: General Requirements
- Rule 8021: Construction, Demolition Excavation, Extraction, and Other Earthmoving Activities
- Rule 8031: Bulk Materials
- Rule 8041: Carryout and Trackout
- Rule 8051: Open Areas
- Rule 8061: Paved and Unpaved Roads
- Rule 8071: Unpaved Vehicle/Equipment Traffic Areas.

Rule 9510 (Indirect Source Review)

Rule 9510 is intended to reduce emissions of NO_x and PM_{10} from new development projects. The rule applies to specified development projects that seek to gain a discretionary approval. However, a development project on a facility whose primary functions are subject to Rule 2201 (New and Modified Stationary Source Review Rule) or Rule 2010 (Permits Required) is exempt from this rule. The SJVAPCD issued an Air Impact Assessment Application Approval to Southern California Edison (SCE) for the Cross Valley Transmission Project on October 10, 2011, per Rule 9510, Section 6.1.1, for source reduction of NO_x and PM_{10} from off-road construction equipment (see Appendix C).

Tulare County General Plan

The Tulare County General Plan 2030 Update contains goals, policies, objectives, and implementation measures that comprehensively address general conditions and site-specific circumstances that may affect air quality. The policies that are project-specific are listed below (County of Tulare 2012a).

AQ-1.2 **Cooperation with Local Jurisdictions.** The County shall participate with cities, surrounding counties, and regional agencies to address cross-jurisdictional transportation and air quality issues.

AQ-1.4 **Air Quality Land Use Compatibility.** The County shall evaluate the compatibility of industrial or other developments which are likely to cause undesirable air pollution with regard to proximity to sensitive land uses and wind direction and circulation in an effort to alleviate effects upon sensitive receptors.

AQ-4 To implement the best available controls and monitoring necessary to regulate air emissions.

AQ-4.1 **Air Pollution Control Technology.** The County shall utilize the BACM [Best Available Control Measures] and RACM [Reasonably Available Control Measures] as adopted by the County to support SJVAPCD air quality attainment plans to achieve and maintain healthful air quality and high visibility standards. These measures shall be applied to new development approvals and permit modifications as appropriate.

AQ-4.2 **Dust Suppression Measures.** The County shall require developers to implement dust suppression measures during excavation, grading, and site preparation activities consistent with SJVAPCD Regulation VIII–Fugitive Dust Prohibitions. Techniques may include, but are not limited to, the following:

- Site watering or application of dust suppressants
- Phasing or extension of grading operations
- Covering of stockpiles
- Suspension of grading activities during high wind periods (typically winds greater than 25 miles per hour)
- Revegetation of graded areas.

AQ-4.3 **Paving or Treatment of Roadways for Reduced Air Emissions.** The County shall require that all new roads be paved or treated to reduce dust generation where feasible as required by SJVAPCD Regulation VIII, Rule 8061–Paved and Unpaved Roads. For new projects with unpaved roads, funding for roadway maintenance shall be adequately addressed and secured.

13.2.2 Greenhouse Gases

Federal Regulations

The following federal regulations pertaining to climate change would apply to the proposed action.

Massachusetts v. EPA

On April 2, 2007, in *Massachusetts v. EPA*, 549 U.S. 497, the Supreme Court found that GHGs are air pollutants covered by the Clean Air Act. The court held that the EPA Administrator must determine whether or not emissions of GHGs from new motor vehicles cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. In making these decisions, the EPA Administrator is required to follow the language of Section 202(a) of the Clean Air Act. On December 7, 2009, the EPA Administrator signed a final rule with two distinct findings regarding GHGs under Section 202(a) of the Clean Air Act:

- The EPA Administrator found that elevated concentrations of GHGs—CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6—in the atmosphere threaten the public health and welfare of current and future generations. This is referred to as the endangerment finding.
- The EPA Administrator further found the combined emissions of GHGs—CO_2, CH_4, N_2O, and HFCs—from new motor vehicles and new motor vehicle engines contribute to the GHG air pollution that endangers public health and welfare. This is referred to as the "cause or contribute finding."

These two findings were necessary to establish the foundation for regulation of GHGs from new motor vehicles as air pollutants under the Clean Air Act. As a result of the "endangerment findings," the EPA has enacted, along with the National Highway Traffic Safety Administration, several regulations to reduce GHG emissions from passenger vehicles and medium- and heavy-duty trucks.

State Regulations

The following California regulations pertaining to climate change would apply to the proposed action.

Executive Order S-3-05

In June 2005, Governor Arnold Schwarzenegger established California's GHG emissions reduction targets in Executive Order S-3-05. The Executive Order established the following goals: GHG emissions should be reduced to 2000 levels by 2010; GHG emissions should be

reduced to 1990 levels by 2020; and GHG emissions should be reduced to 80% below 1990 levels by 2050. The Secretary of CalEPA is required to coordinate efforts of various agencies in order to collectively and efficiently reduce GHGs. Representatives from several state agencies comprise the Climate Action Team, which is responsible for implementing global warming emissions reduction programs. The Climate Action Team fulfilled its report requirements through the March 2006 Climate Action Team Report to the governor and the legislature (CAT 2006). A second biennial report, released in April 2010 (CAT 2010), expands on the policy oriented in the 2006 assessment.

AB 32

In furtherance of the goals established in Executive Order S-3-05, the legislature enacted Assembly Bill 32 (AB 32, Nuñez and Pavley), the California Global Warming Solutions Act of 2006, which Governor Schwarzenegger signed on September 27, 2006. The GHG emissions limit is equivalent to the 1990 levels, which are to be achieved by 2020.

CARB was assigned to carry out and develop the programs and requirements necessary to achieve the goals of AB 32. Under AB 32, CARB must adopt regulations requiring the reporting and verification of statewide GHG emissions. This program will be used to monitor and enforce compliance with the established standards. CARB is also required to adopt rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emission reductions. AB 32 allows CARB to adopt market-based compliance mechanisms to meet the specified requirements. Finally, CARB is ultimately responsible for monitoring compliance and enforcing any adopted rule, regulation, order, emission limitation, emission reduction measure, or market-based compliance mechanism.

As required under AB 32, on December 6, 2007, CARB approved the 1990 GHG emissions inventory, thereby establishing the emissions limit for 2020. The 2020 emissions limit was set at 427 MMT CO_2E.

On December 11, 2008, CARB approved the Scoping Plan to achieve the goals of AB 32. The Scoping Plan establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions. The Scoping Plan evaluates opportunities for sector-specific reductions, integrates all CARB and Climate Action Team early actions and additional GHG reduction measures by both entities, identifies additional measures to be pursued as regulations, and outlines the role of a cap-and-trade program. Additional development of these measures and adoption of the appropriate regulations will occur over the next 2 years, becoming effective by January 1, 2012. The key elements of the Scoping Plan include (CARB 2008):

- Expanding and strengthening existing energy efficiency programs, and building and appliance standards

- Achieving a statewide renewables energy mix of 33%
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system and caps sources contributing 85% of California's GHG emissions
- Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets
- Adopting and implementing measures pursuant to existing state laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard
- Creating targeted fees, including a public goods charge on water use, fees on high GWP gases, and a fee to fund the administrative costs of the California's long-term commitment to AB 32 implementation.

Local Regulations

The following local regulations pertaining to climate change would apply to the proposed action.

Tulare County General Plan

The Tulare County General Plan 2030 Update contains goals, policies, objectives, and implementation measures that comprehensively address general conditions and site-specific circumstances that may affect climate change. The policies that are project-specific are listed below (County of Tulare 2012a).

AQ-1.7 **Support Statewide Climate Change Solutions.** The County shall monitor and support the efforts of Cal/EPA, CARB, and the SJVAPCD, under AB 32 (Health and Safety Code Section 38501 et seq.), to develop a recommended list of emission reduction strategies. As appropriate, the County will evaluate each new project under the updated General Plan to determine its consistency with the emission reduction strategies.

As an implementation measure of the General Plan Update, the County of Tulare adopted a Climate Action Plan (CAP) in August 2012 (County of Tulare 2012b). The CAP serves as the guiding document in the County to reduce GHG emissions through specific actions to achieve emission reduction targets consistent with California legislation. One of the most important uses for the CAP is to establish significance thresholds for review projects under the California Environmental Quality Act (CEQA). Projects that demonstrate consistency with the policies, implementation measures, and emission reduction targets contained in the CAP would have a

less-than-significant impact on climate change. In regards to the emission reduction targets, the CAP states that:

> The State regulations are projected to achieve a 24.6% reduction in emissions from vehicles, fuels, energy efficiency, and landfill methane controls by 2020. Regulations adopted by the San Joaquin Valley Air Pollution Control District on transportation and indirect sources are estimated to reduce emissions by 0.5% by 2020. Based on the analysis conducted in preparing the CAP, an overall additional reduction of 1.1% from new and existing development is required to show consistency with the Scoping Plan target for development related sources of 26.2%. Achieving a 1.1% reduction from new development by 2020 will require an average project level reduction of 6%. The project reductions may be achieved through land use related measures such as increased density, pedestrian and transit-oriented development, support for alternative transportation modes, and measures that reduce energy consumption through improved energy efficiency in buildings, water conservation, and waste reduction (County of Tulare 2012b).

13.3 ENVIRONMENTAL CONSEQUENCES

13.3.1 Methodology for Impact Analysis

The HCP Permit Area setting was developed by reviewing available information on air quality and climate change in the vicinity of the proposed action. SCE prepared the air quality calculations using the methodology and emission factors for 2012 and 2013, which were provided in Appendix E of the Cross Valley Loop Transmission Project Draft Environmental Impact Report (DEIR) (CPUC 2009), but updated the construction emissions based on activities in 2013 and 2014 to reflect the construction activities in the HCP Permit Area. This approach is generally a more conservative approach because fleet emissions tend to decrease over time as older equipment is replaced due to age or CARB requirements for diesel off-road equipment and on-road vehicles. In the DEIR, emission factors for construction equipment were derived using CARB's OFFROAD2007 off-road equipment emission inventory model; CARB's EMFAC2007 on-road vehicle emission inventory model was used to develop emissions factors for on-road vehicles such as worker commute vehicles, pickup trucks, and diesel semi-trucks; and on-site fugitive dust emissions were developed based on methods presented in the CARB area-wide source methodology for construction dust as well as PM_{10}/$PM_{2.5}$ speciation factors developed by the South Coast Air Quality Management District (CPUC 2009). Calculation sheets are provided in Appendix C.

Construction activities for the transmission line are divided into survey phase and 12 separate phases: 1) Laydown Yard; 2) Right-of-Way Clearing; 3) Roads and Landing Work; 4) Guard Structure Installation; 5) Install Tower and Pole Functions; 6) Tower and Pole Haul; 7) Tower and Pole Assembly; 8) Tower and Pole Erection; 9) Install Conductor and Optical Ground Wire

(OPGW); 10) Guard Structure Removal; 11) Restoration; and 12) Helicopter Use. Projected annual construction emissions by year, detailed by activity, are presented in Table 13-7.

Table 13-7
Construction Emissions Summary
Total Annual Criteria Pollutant Emissions in tons by Construction Phase

	ROG/VOC (ton/year)		CO (ton/year)		NO_x (ton/year)		SO_x (ton/year)		PM_{10} (ton/year)		$PM_{2.5}$ (ton/year)	
Construction Phase	*2013*	*2014*	*2013*	*2014*	*2013*	*2014*	*2013*	*2014*	*2013*	*2014*	*2013*	*2014*
Survey	0.00	—	0.03	—	0.00	—	0.00	—	0.05	—	0.01	—
Laydown Yard	0.01	—	0.05	—	0.12	—	0.00	—	0.01	—	0.01	—
Right-of-Way Clearing	0.10	—	0.39	—	0.96	—	0.00	—	1.62	—	0.36	—
Roads and Landing Work	0.05	—	0.19	—	0.49	—	0.00	—	1.10	—	0.24	—
Guard Structure Installation	0.04	—	0.13	—	0.32	—	0.00	—	0.10	—	0.03	—
Install Tower and Pole Foundations	0.12	—	0.51	—	1.23	—	0.00	—	1.20	—	0.28	—
Tower and Pole Haul	0.01	—	0.03	—	0.08	—	0.00	—	0.19	—	0.04	—
Tower and Pole Assembly	0.21	—	0.88	—	1.54	—	0.00	—	0.86	—	0.26	—
Tower and Pole Erection	0.12	0.04	0.48	0.16	0.86	0.29	0.00	0.00	0.56	0.52	0.16	0.12
Install Conductor and OPGW	0.21	0.12	0.87	0.48	2.11	1.17	0.00	0.00	1.21	0.67	0.31	0.17
Guard Structure Removal	—	0.01	—	0.04	—	0.08	—	0.00	—	0.09	—	0.02
Restoration	0.02	0.04	0.09	0.13	0.23	0.35	0.00	0.00	0.34	0.51	0.08	0.12
Helicopter Use	0.09	0.09	0.34	0.34	1.13	1.13	0.00	0.00	0.11	0.11	0.05	0.05
Total Phase Emissions	0.99	0.29	4.00	1.16	9.09	3.02	0.01	0.00	7.33	1.90	1.82	0.48
Conformity *de minimis* Threshold	10	10	—	—	10	10	—	—	100	100	100	100
Exceeds Threshold?	No	No	No	No	No	No	No	No	No	No	No	No
SJVAPCD Thresholds	10	10	—	—	10	10	—	—	15	15	—	—
Exceeds Threshold?	No	No	No	No	No	No	No	No	No	No	No	No

Source: Appendix C
Notes:
VOC –volatile organic compounds
ROG – reactive organic gases
CO – carbon monoxide
NOx – nitrogen oxides
SOx – sulfur oxides
PM10 – suspended particulate matter measuring less than 10 microns
PM2.5 – suspended particulate matter measuring less than 2.5 microns
indicates that emissions would not occur due to the listed activity in that year.
Totals may appear to be different than the sum of the individual values due to rounding.

Calculations for operation and maintenance Covered Activities in the HCP Permit Area were not conducted in the Cross Valley Loop Transmission Project DEIR because these activities would be limited to periodic maintenance and inspection trips and not exceed any construction emissions as listed in Table 13-7. Furthermore, operational and maintenance Covered Activities were not expected to increase substantially above existing activity levels. Therefore, a qualitative discussion is provided herein.

Identifying the Threshold of Significance

For the purposes of this EA, an alternative would have a significant impact on air quality and climate change if it would:

- Generate emissions in excess of federal de minimis thresholds or SJVAPCD significance thresholds
- Generate a significant level of GHG emissions
- Expose sensitive receptors to substantial pollutant concentrations.

Criteria Air Pollutants

To determine whether the emissions associated in the HCP Permit Area would result in adverse impacts for criteria pollutants, the emissions generated as a result of construction and operation and maintenance activities were compared against SJVAPCD annual emission thresholds shown in Table 13-8 and the general conformity de minimis thresholds shown in Table 13-9. Given the absence of Service-specific air quality significance criteria, the Service believes that the SJVAPCD thresholds provide one useful method of assessing the magnitude of air quality effects. Although these thresholds have been developed by the SJVAPCD for purposes of conducting analysis pursuant to CEQA and are not specifically intended for use in National Environmental Policy Act (NEPA) analyses, they provide a helpful point of measurement to determine the magnitude of an alternative's effects on air resources. In addition, these thresholds represent the generally accepted approach to determining whether a project's emissions would result in a substantial contribution to existing violations of the CAAQS or NAAQS as presented in Section 13.2.

Table 13-8
SJVAPCD Significance Thresholds

Criteria Pollutant	Annual (tons/year)
Oxides of Nitrogen (NO_x)	10
Reactive Organic Gases (ROGs)	10
Respirable Particulate Matter (PM_{10})	15

Source: SJVAPCD 2002 (NO_x and ROG), PM_{10} threshold is recommended by SJVAPCD staff.

General Conformity

Due to the Service's approval authority over the HCP, as a federal agency, the approved action must demonstrate conformity with the applicable SIP adopted to reduce air quality violations within the geographic purview of the SIP in accordance with the federal Clean Air Act Section 176. Under the general conformity regulations, both the direct and indirect emissions associated with a federal action must be evaluated.

Title 40, Code of Federal Regulations, Part 93, Subpart B, defines direct emissions as:

> [T]hose emissions of a criteria pollutant or its precursors that are caused or initiated by the Federal action and originate in a nonattainment or maintenance area and occur at the same time and place as the action and are reasonably foreseeable.

Indirect emissions are defined as:

> [T]hose emissions of a criteria pollutant or its precursors:
>
> (1) That are caused or initiated by the Federal action and originate in the same nonattainment or maintenance area but occur at a different time or place as the action
>
> (2) That are reasonably foreseeable
>
> (3) That the agency can practically control
>
> (4) For which the agency has continuing program responsibility.
>
> For the purposes of this definition, even if a federal licensing, rulemaking, or other approving action is a required initial step for a subsequent activity that causes emissions, such initial steps do not mean that a federal agency can practically control any resulting emissions.

A conformity determination is required for each criteria pollutant or precursor where the total of direct and indirect emissions of the criteria pollutant or precursor in a federal nonattainment or maintenance area would equal or exceed specified annual emission rates, referred to as "de minimis" thresholds. For ozone and PM_{10} nonattainment areas, the de minimis thresholds depend on the severity of the nonattainment classification; for other nonattainment and maintenance pollutants, the threshold is generally set at 100 tons per year.

Because the HCP Permit Area is designated as nonattainment for ozone and $PM_{2.5}$ and as a maintenance area for PM_{10}, general conformity requirements would apply to the construction, maintenance, and operation Covered Activities in the HCP Permit Area. The Service is the federal agency with approval responsibility over the proposed action due to the approval of an Incidental Take Permit (ITP) and HCP; however, the Service would not have the authority over the ongoing operation of the Cross Valley Line. For the purpose of this analysis to evaluate the applicability of the general conformity requirements and the potential for construction in the

HCP Permit Area to result in adverse impacts to air quality, the de minimis thresholds shown in Table 13-9 would apply.

Table 13-9
General Conformity De Minimis Thresholds

Criteria Pollutant	Status	Annual (tons/year)
Oxides of Nitrogen (NO_x)	Severe Nonattainment (Ozone)	10
Volatile Organic Compounds (VOCs)	Severe Nonattainment (Ozone)	10
Respirable Particulate Matter (PM_{10})	Attainment/Maintenance	100
Fine Particulate Matter ($PM_{2.5}$)	Nonattainment	100
$PM_{2.5}$ (NO_x)[1]	(Nonattainment)	100
$PM_{2.5}$ (VOC and NH_3)[3]	(Nonattainment)	100
$PM_{2.5}$ (SO_2)	(Nonattainment)	100

Source: 40 CFR 93.

[1] NO_x is included unless determined not to be a significant precursor. However, the NO_x threshold based on its contribution to ozone is more stringent.

[2] VOC and ammonia (NH_3) are not included unless determined to be a significant precursor. However, the VOC threshold based on its contribution to ozone is more stringent. Ammonia would not be emitted as a result of the proposed action.

GHG Emissions

In February 2010, the Council on Environmental Quality (CEQ) issued draft guidance for considering GHG emissions and environmental effects on climate change for federal actions in accordance with Section 102 of NEPA and the *CEQ Regulations for Implementing the Procedural Provisions of NEPA, 40 CFR Parts 1500–1508* (CEQ 2010). The draft guidance was released for public comment on February 23, 2010, for a 60-day period. It has not been finalized as of this writing. The draft guidance for analyzing GHG emissions state that federal actions should consider (CEQ 2010):

(1) The GHG emissions effects of a proposed action and alternative actions

(2) The relationship of climate change effects to a proposed action or alternatives, including the relationship to proposal design, environmental impacts, mitigation and adaptation measures.

The draft guidance recommends that if a proposed federal action would be anticipated to result in excess of 25,000 MT CO_2E per year of direct GHG emissions, a quantitative and qualitative assessment should be conducted. CEQ indicates that the 25,000 MT CO_2E per year level should be used as an indicator for further environmental assessment, and not as an established threshold in the determination of significant effects. CEQ also recommends that GHG emissions be discussed in a global context reflecting the global nature in the accumulation of GHGs (without extensive speculation as to the action's specific impacts on global climate change), while also providing quantitative analysis on project-level emissions and impacts that would occur within

the spatial and temporal boundaries over which the agency has jurisdiction. In this light, the draft guidance states that "in the agency's analysis of direct effects, it would be appropriate to: (1) quantify cumulative emissions over the life of the project; (2) discuss measures to reduce GHG emissions, including consideration of reasonable alternatives; and (3) qualitatively discuss the link between such GHG emissions and climate change" (CEQ 2010).

The level of 25,000 MT CO_2E per year from the draft CEQ guidance discussed above will be used as an indicator as to whether the GHG emissions during construction or operation activities would result in an adverse impact.

13.3.2 No Action Alternative

Direct and Indirect Effects

Under the No Action Alternative, the proposed HCP, including Covered Activities, would not be implemented; therefore, construction emissions and direct operating emissions associated with development of a transmission line in the HCP Permit Area would not occur. Under future conditions, reasonably foreseeable development requiring land disturbance (e.g., grading, excavation), truck hauling, construction equipment, and worker trips would generate criteria pollutant emissions and possibly operating emissions. Development projects would be assessed for compliance with the SJVAPCD significance thresholds (refer to Table 13-8) and SJVAPCD Regulation VIII and other rules and, if the development were subject to federal actions, with the General Conformity de minimis thresholds (refer to Table 13-9) and draft CEQ guidance on GHG emissions. Appropriate air quality emission calculations would be required as part of the environmental review process. Projects would be individually required to mitigate any potentially significant air quality and GHG impacts.

Determination

Under the No Action Alternative, construction and operation and maintenance emissions would not be affected by development of the transmission line in the HCP Permit Area. There would be no indirect adverse effect to the SJVAB by development of the transmission line in the HCP Permit Area. The NAAQS (refer to Table 13-1) and CAAQS (refer to Table 13-2) status in the SJVAB would remain as they currently exist. Under this alternative, future development in the HCP Permit Area may be required to conduct its own air quality analysis and be required to mitigate any potentially significant air quality and GHG impacts.

13.3.3 Proposed Action Alternative

Direct and Indirect Effects

Impact AQ-1: Generation of emissions in excess of federal de minimis thresholds or SJVAPCD significance thresholds.

Construction of the transmission line would take approximately 2 years to complete, commencing in 2013; therefore, total estimated emissions for all construction activities were used to represent annual emissions. The total estimated emissions for 2013 and 2014 associated with each phase of construction are presented in Table 13-7. Exhaust emissions include heavy-duty equipment exhaust, on-road truck emissions, and worker vehicle emissions. Fugitive dust emissions include emissions associated with travel on paved and unpaved roads as well as emissions associated with grading and earth-disturbing activities. A detailed description of the construction schedule, including information regarding construction subphases, work schedules, and anticipated equipment fleet, is provided in Appendix C.

Construction activities in the HCP Permit Area would result in a temporary addition of pollutants to the local airshed caused by soil disturbance, fugitive dust emissions, and combustion pollutants from on-site construction equipment, as well as from off-site trucks hauling construction materials. Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation and, for dust, the prevailing weather conditions. Therefore, such emission levels can only be approximately estimated with a corresponding uncertainty in precise ambient air quality effects. Fugitive dust (PM_{10} and $PM_{2.5}$) emissions would primarily result from grading and site preparation activities. NO_x and CO emissions would primarily result from the use of construction equipment and motor vehicles.

Construction emissions are compared to the SJVAPCD's threshold of 10 tons per year for both NO_x and ROG and 15 tons per year for PM_{10}. Regarding construction emissions of CO and SO_2, the SJVAPCD has not developed quantitative thresholds for these pollutants. Construction-related emissions of these pollutants would not contribute substantially to a new violation because the ambient levels for these pollutants in the HCP Permit Area are below the CAAQS and NAAQS, and the emissions of CO and SO_2 from construction activities would be negligible and short term. Similarly, the General Conformity de minimis thresholds have been applied to the construction emissions: 10 tons per year for NO_x and ROG, 100 tons per year for PM_{10} and $PM_{2.5}$. Construction emissions would be relatively short term and would cease upon transmission line completion and operating and maintenance activities would be periodic and temporary with very small numbers of vehicle trips. As shown in Table 13-7, construction emissions would not exceed the SJVAPCD significance thresholds or general conformity de minimis thresholds for any of the relevant criteria pollutants. Additionally, the SJVAPCD has approved the Air Impact

Assessment for the Cross Valley Transmission Line Project and determined that the construction equipment will achieve a 20% reduction of NO_x and 45% reduction of PM_{10} from off-road construction equipment as required per Section 6.1.1 of Rule 9510. Furthermore, SCE (and/or its contractors) has committed to implement Environmental Commitment (EC) AQ-1 for dust control measures and EC AQ-2 to reduce fugitive PM_{10} and $PM_{2.5}$ emissions. To limit fugitive PM_{10} and $PM_{2.5}$ emissions from unauthorized access on new access and spur roads, gates would be installed where required at fenced property lines. These ECs would further reduce the construction emissions indicated in Table 13-7.

Environmental Commitments

EC AQ-1: During construction, SCE and/or its contractors shall implement the following dust control measures:

- All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover, or vegetative ground cover.
- All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.
- All land clearing, grubbing, scraping, excavation, land leveling, grading, cut-and-fill, and demolition activities shall be effectively controlled for fugitive dust emissions utilizing application of water or by presoaking.
- When materials are transported off-site, all material shall be covered or effectively wetted to limit visible dust emissions and at least 6 inches of freeboard space from the top of the container shall be maintained.
- All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. (The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions and the use of blower devices is expressly forbidden.)
- Following the addition of materials to, or removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant.
- Within urban areas, trackout shall be immediately removed when it extends 50 or more feet from the site and at the end of each workday.
- Traffic speed on unpaved roads shall be limited to 15 miles per hour (mph).

- Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from sites with a slope greater than 1%.
- Windbreaks shall be installed at windward side(s) of construction areas.
- Excavation and grading activity shall be suspended when winds exceed 20 mph.
- Limit area subject to excavation, grading, and other construction activity at any one time
- Chemical stabilizers/suppressants used in proximity to agricultural areas must be approved by the Tulare County Farm Bureau, to ensure their use is compatible with nearby crops.

  (This measure corresponds to Mitigation Measure 4.3-1b (CPUC 2010).)

EC AQ-2: After construction, SCE shall, during operation of the project, utilize the following control measures to reduce fugitive PM_{10} and $PM_{2.5}$ emissions from permanently disturbed land and new access and spur roads:

- Apply and maintain water or dust suppressants to all un-vegetated areas;
- Establish land-owner approved vegetation that is compliant with SCE line clearance requirements; or
- Apply and maintain landowner-approved surface treatments (e.g., gravel or crushed stone)

  (This measure corresponds with Mitigation Measure 4.3-3 (CPUC 2010).)

This would result in no significant adverse impact as construction, operation, and maintenance emissions would be below the SJVAPCD significance thresholds and General Conformity de minimis thresholds. Implementation of the commitment associated with the approved Air Impact Assessment (see Appendix C) and EC AQ-1 and EC AQ-2 during construction activities in the HCP Permit Area would ensure construction emissions remain below these thresholds.

Impact AQ-2: Generation of a significant level of greenhouse gas emissions.

Construction of the transmission line may require permanent removal of trees in some portions of the HCP Permit Area, which would result in more open, exposed land that would lead to increased fugitive dust emissions. EC AQ-3 would be implemented to reduce emissions from tree disposal by ensuring that 100% of wood waste would be diverted from landfills and that the majority of wood waste would be composted (CPUC 2009). Implementation of EC AQ-4 would require that permanent loss of orchard trees as a result of construction activities in the HCP Permit Area are fully offset (CPUC 2009).

Construction GHG emissions would occur as a result of burning the fuel required to operate the on-site construction equipment and delivery trucks and vehicles to mobilize work crews to and from the HCP Permit Area. Construction of the transmission line would occur over the course of 1–2 years commencing in 2013, and would it include the use of existing laydown areas and temporary storage yards, clearing of rights-of-way, construction of temporary and permanent access roads, removal and installation of guard structures, transmission line and tower installation, and conductor pulling. A detailed description of the construction schedule, including information regarding construction subphases, work schedules, and anticipated equipment fleet is provided in Appendix C. Table 13-10 shows construction-related GHG emissions for the entire construction period in MT CO_2E.

Table 13-10
Construction Emissions Summary
Total Greenhouse Gas Emissions by Construction Phase

Cross Valley Line Construction Phase	Greenhouse Gases per Activity (MT CO_2E)	
	2013	*2014*
Survey	93.08	—
Laydown Yard	14.47	—
Right-of-Way Clearing	120.38	—
Roads and Landing Work	64.15	—
Guard Structure Installation	46.68	—
Install Tower and Pole Foundations	218.97	—
Tower and Pole Haul	10.12	—
Tower and Pole Assembly	157.12	—
Tower and Pole Erection	92.34	30.78
Install Conductor and OPGW	281.24	156.24
Guard Structure Removal	—	9.27
Restoration	28.26	42.39
Helicopter Use	185.66	185.66
Total	1,312.47	424.34

Source: Appendix C.

As shown in Table 13-10, the maximum annual construction-related GHG emissions would be less than the CEQ GHG indicator of 25,000 MT CO_2E/yr. Therefore, construction of the transmission line would result in no significant adverse impact.

Environmental Commitments

EC AQ-3: During construction, SCE shall dispose of all removed trees and other green waste via the Tulare County's Wood and Green Waste Program. To ensure compliance with this program, SCE shall:

- Collect all wood and green waste generated from the removal of orchard trees separately from other construction and demolition waste, and place wood and green waste in a separate recovery area;
- Keep wood and green waste free of contaminants such as dirt, rock concrete, plastic, metal, and other contaminants that can damage wood waste processing equipment and reduce the quality of the compost; and
- Prohibit the inclusion of yucca leaves, palm fronds, or bamboo (which cannot be included in the salvage program) from the wood and green waste recovery area

(This measure corresponds with Mitigation Measure 4.3-8b (CPUC 2010).)

EC AQ-4: Prior to the conclusion of construction, SCE shall establish, fund, and implement a tree replacement program with the Urban Tree Foundation of Visalia, California (or other comparable organization in Tulare County) for the replacement of all permanently removed orchard trees on a 1.5 to 1 basis. In order of priority, the location for the tree replacement program shall be (1) Tulare County (utilizing an organization such as the Urban Tree Foundation of Visalia), (2) adjacent counties in the Central Valley, (3) elsewhere in California, or (4) a combination of (1) through (3). The tree replacement program shall provide for the selection of appropriate tree species and suitable locations for the plantings, and shall also provide for the maintenance of the plantings for a minimum of 1 full year to maximize survival rate. SCE shall provide the California Public Utilities Commission (CPUC) with documentation of the tree replacement program, including the types and quantities of each tree species to be planted, the planting locations, the planting schedule, and the methodology for maintaining the plantings. (**Note:** it is the intent of this EC to offset the loss of carbon sequestration from the permanent loss of trees, not to replace the loss of a particular crop; therefore, it is not required that the replacement trees be orchard species.)

(This measure corresponds with Mitigation Measure 4.3-8c (CPUC 2010).)

Impact AQ-3: Expose sensitive receptors to substantial pollutant concentrations.

Sensitive receptors are generally land uses with population concentrations that would be particularly susceptible to disturbance from dust and air pollutant concentrations during construction, operation, and maintenance activities and that house or attract children, the elderly, people with illnesses, or others who are especially sensitive to the effects of air pollutants. Sensitive receptor land uses generally include residences, schools, daycare centers, parks and recreation facilities, and hospitals. There are a number of residences located within 200 feet of the HCP Permit Area. There are also rural residences scattered intermittently along the new ROW that would be acquired by SCE. Some of these residences are located within 50 feet of the proposed ROW (CPUC 2009).

Union Elementary School, on Road 148 just north of East Caldwell Avenue, is approximately 1,500 feet south of the Rector Substation. Mineral King Elementary School and Golden West High School are over 0.5 mile from the proposed HCP Permit Area's north–south portion. There are no schools located within one-quarter mile of the proposed HCP Permit Area.

Additionally, the east–west portion of the proposed HCP Permit Area would be constructed in proximity to several rural residences and would traverse undeveloped, agriculturally dominant land uses. Three recreational facilities are located within proximity to the HCP Permit Area: the Lewis Ranch Stallion Station is located approximately 0.76 mile north from the east–west portion of the proposed HCP Permit Area, the Horse Corral Pack Station is located approximately 0.57 mile south from the east–west portion, and Sentinel Butte Valley is located approximately 1.3 miles south from the east–west portion of the HCP Permit Area (see Figure 17-2, Recreational Facilities).

Cutler Park, a 50-acre property, is located approximately 0.78 mile east of the north–south alignment near the community of Ivanhoe, along the St. John's River. The north–south portion of the proposed HCP Permit Area is located within 1 mile of two City of Visalia parks: St. John's Parkway and Mill Creek Park (Figure 17-2, Recreational Facilities).

As discussed previously, construction activities in the HCP Permit Area would generate emissions of criteria pollutants, including suspended and inhalable particulate matter as well as equipment and truck exhaust emissions. However, due to the linear nature of transmission facilities, construction activities would not remain in the same place for longer than a few days at a time, thereby reducing the amount of time that any one receptor would be exposed to elevated concentrations of air pollutants. Long-term pollutant emissions in the HCP Permit Area would be negligible since emission-related activities would be limited to periodic maintenance and inspection trips. Normal maintenance and inspection activities would include annual aerial and/or ground inspections of transmission facilities as well as inspection of spur and access

roads. Access and spur roads would be maintained and repaired in a manner consistent with SCE's road maintenance and repair practices. Exhaust emissions from these operational activities would not be expected to exceed a rate of one ton per year of ROG, NO_x, and PM_{10}, which would be well below the SJVAPCD significance threshold of 10 tons per year. Exhaust emissions for $PM_{2.5}$, CO, and SO_2 would be negligible for ongoing operations of the transmission line (CPUC 2009).

It is required by regulation that construction in the HCP Permit Area be conducted in compliance with SJVAPCD Regulation VIII, Fugitive PM10 Prohibitions. Inspection and maintenance activities associated with operation would generate PM10 emissions from travel on unpaved roads; however, these activities would also be subject to rules set forth in Regulation VIII. Furthermore, implementation of the commitment in the Air Impact Assessment (see Appendix C) and Rule 9510 and EC AQ-1 and EC AQ-2 would ensure impacts to sensitive receptors are not adverse. As such, this would result in no significant adverse impact.

Cumulative Effects of the Proposed Action

Impacts AQ-1 through AQ-3

The transmission line's cumulative impacts are based on an analysis of the consistency of the transmission system with the applicable air quality plan. Construction, operation, and maintenance activities in the HCP Permit Area would not conflict with or obstruct the implementation of any federal, state, or local air quality attainment plans. As a result, the construction, operation, and maintenance of the transmission line in the HCP Permit Area would not result in a cumulatively considerable net increase in any criteria pollutant for which the HCP Permit Area is in nonattainment under an applicable federal or state ambient air quality standard. It is not likely that construction of the transmission line would occur in the immediate vicinity at the same time that the transmission line is being constructed such that overlap of construction activities with surrounding projects would occur. Therefore, cumulative impacts during construction would not result in an adverse effect.

The SJVAB is a nonattainment area with respect to the CAAQS and NAAQS for ozone because of cumulative emissions from numerous sources throughout the SJVAB as well as transport of pollutants from regions outside of the SJVAB. Most sources emit ROG and NO_x in quantities that are too small to have a measureable effect on ambient ozone concentrations by themselves; however, when they are considered in a cumulative sense, these emissions result in severe problems to the ambient air quality throughout the SJVAB. In response to this issue, the SJVAPCD has developed an annual emissions threshold of 10 tons for both ozone precursors, ROG and NO_x, to limit the individual contribution of discrete projects, thereby reducing the cumulative impacts of many smaller-scale projects. As previously discussed, construction

emissions in the HCP Permit Area would be below the threshold of 10 tons per year for both ROG and NO_x and would therefore not contribute cumulatively to ozone precursor emissions in the SJVAB. The SJVAPCD has approved the Air Impact Assessment for the Cross Valley Transmission Line Project and determined that the construction equipment will achieve a 20% reduction of NO_x and 45% reduction of PM_{10} from off-road construction equipment as required per Section 6.1.1 of Rule 9510.

Present and probable future projects in the vicinity of the HCP Permit Area, as shown on Figure 3-1, Cumulative Projects, would include the Big Creek Rebuild project, consisting of the installation of approximately 14 double-circuit lattice towers and 42 double-circuit, tubular steel poles. The Big Creek Rebuild project, when considered in combination with the proposed action, would not result in a cumulatively considerable construction effect because this project would be completed prior to permit issuance for the proposed action. Additionally, following completion of construction activities, operation of the Big Creek Rebuild project would not result in significant operational and maintenance criteria pollutant emissions. There are also several road widening projects as well as community development projects, such as residential subdivisions, near the HCP Permit Area. If grading and earth-moving activities associated with these projects would overlap with activities associated with construction of the transmission line, cumulative local impacts to PM_{10} and $PM_{2.5}$ levels would be potentially adverse.

The SJVAPCD recommends that a project's cumulative contribution to PM_{10} emissions be evaluated based on the potential for earth-disturbing activities associated with the project to overlap with earth-disturbing activities associated with other nearby projects. If it appears that the level of activity may cause an adverse impact, then appropriate dust control measures should be implemented. The only earth-disturbing activity associated with operation of the transmission system would result from travel on unpaved roads during inspection activities and occasional re-grading of roads during routine maintenance activities. Since these activities would occur along a line and would not remain in the same location for an extended period of time, it is unlikely that they would cause an adverse impact when considered with other earth-disturbing activities in the area. Therefore, operation of the transmission line would not result in a cumulative considerable impact to PM_{10} levels. Furthermore, implementation of EC AQ-2 would reduce fugitive PM_{10} emissions from operation and maintenance activities, thereby further decreasing the transmission line's individual contribution to PM_{10} levels.

Operation and maintenance activities of the transmission line would generate less than 1 ton of exhaust emissions per year for each criteria pollutant. These emissions would not exceed the annual threshold for ozone precursors set by the SJVAPCD for individual projects. Since the threshold of 10 tons per year of ROG and NO_x were set by the SJVAPCD to reduce each project's individual contribution to cumulative air quality impacts, if a project does not exceed these thresholds, then its individual contribution would be less than significant or not adverse. Therefore, when added to impacts from operation and maintenance of other projects in the

SJVAB, the transmission line's incremental contribution to ozone precursor emissions would be less than cumulatively considerable. Operational exhaust emissions of $PM_{2.5,}$ CO, and SO_2 would be negligible and would also be less than cumulatively considerable. It is generally acknowledged that even a very large development project cannot individually generate enough GHG emissions to measurably influence global climate change. Global climate change is by its nature a cumulative impact. An individual project would contribute to the cumulative increase in GHG emissions from all global sources, which combined can produce measurable global climate changes. As noted previously, the construction GHG emissions would be less than the CEQ GHG indicator of 25,000 MT CO_2E/yr. Accordingly, the GHG emissions resulting from construction of the transmission line would result in no significant adverse impact.

Determination

The Service evaluated the past and present effects on air quality and climate change as summarized in Sections 13.1–13.2. Then the Service evaluated effects of the reasonably foreseeable other projects, as summarized in Section 13.3 and Chapter 3. Finally, the Service added the incremental effects of the proposed action, as described in Section 13.3, to those other effects. The Service concludes that the small incremental effects of the proposed permit action and HCP, when added to the effects of the past, present, and reasonably foreseeable future projects on air quality and climate change in the resource study area do not meet the identified thresholds of significance (AQ-1 through AQ-3) and are not considered significant.

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CHAPTER 14.0
NOISE

This chapter describes the existing conditions pertaining to noise and discusses applicable federal, state, and regional regulations. This section also evaluates the potential environmental consequences that could result from each alternative discussed in Chapter 2.

Public and agency comments received during early public scoping and incorporated by reference into this Environmental Assessment (EA) (see Sections 1.3, Public and Agency Involvement, and 1.4, Relationship of EA to Other Environmental Documents) included concerns regarding blasting noise, noise or hum generated from power lines, potential construction noise impacts on sensitive receptors (e.g., residences, schools, places of worship), and compliance with applicable jurisdictional goals and policies from jurisdictional general plans and other governing documents.

Sources consulted for preparation of this analysis are listed in Section 14.4, References Cited.

14.1 AFFECTED ENVIRONMENT

This section describes noise fundamentals and key terminology; describes the existing setting in the HCP Permit Area, including the regulatory setting; and identifies the resources that could be affected by the proposed action as a result of a change in the existing noise environment. For the purposes of this analysis, the resource study area for direct impacts comprises the HCP Permit Area plus a 1,000-foot buffer. Since noise levels diminish quickly with distance from the source of noise, the geographic scope for indirect and cumulative impacts would be limited to a 0.5-mile radius.

14.1.1 Fundamentals of Noise

The following is a brief discussion of fundamental noise concepts including basic terminology.

Sound, Noise, and Acoustics

Sound is a process that consists of three components: the sound source, the sound path, and the sound receiver. All three components must be present for sound to exist. Without a source to produce sound, there is no sound. Similarly, without a medium to transmit sound pressure waves, there is no sound. Finally, sound must be received; a hearing organ, sensor, or object must be present to perceive, register, or be affected by, sound or noise. In most situations, there are many different sound sources, paths, and receptors rather than just one of each. Acoustics is the field of science that deals with the production, propagation, reception, effects, and control of sound. Noise is defined as sound that is loud, unpleasant, unexpected, or undesired.

Sound Pressure Levels and Decibels

The amplitude of a sound determines its loudness. Loudness of sound increases with increasing amplitude. Sound pressure amplitude is measured in units of micronewton per square meter, also

called micropascal. One micropascal is approximately one-hundred billionth (0.00000000001) of normal atmospheric pressure. The pressure of a very loud sound may be 200 million micropascals, or 10 million times the pressure of the weakest audible sound. Because expressing sound levels in terms of micropascals would be very cumbersome, sound pressure level in logarithmic units is used instead to describe the ratio of actual sound pressures to a reference pressure squared. These units are called bels. To provide a finer resolution, a bel is subdivided into 10 decibels, abbreviated dB.

A-Weighted Sound Level

Sound pressure level alone is not a reliable indicator of loudness. The frequency, or pitch, of a sound also has a substantial effect on how humans will respond. Although the intensity (energy per unit area) of the sound is a purely physical quantity, the loudness or human response is determined by the characteristics of the human ear.

Human hearing is limited not only in the range of audible frequencies but also in the way it perceives the sound in that range. In general, the healthy human ear is most sensitive to sounds between 1,000 hertz (Hz) and 5,000 Hz, and it perceives a sound within that range as more intense than a sound of higher or lower frequency with the same magnitude. To approximate the frequency response of the human ear, a series of sound level adjustments is usually applied to the sound measured by a sound level meter. The adjustments (referred to as a weighting network) are frequency-dependent.

The A-scale weighting network approximates the frequency response of the average young ear when listening to most ordinary sounds. When people make judgments about the relative loudness or annoyance of a sound, their judgments correlate well with the A-scale sound levels of those sounds. Other weighting networks have been devised to address high noise levels or other special situations (e.g., B-scale, C-scale, D-scale), but these scales are rarely used in conjunction with most environmental noise. Noise levels are typically reported in terms of A-weighted decibel (dBA) sound levels. All sound levels discussed in this report are A-weighted. Examples of typical noise levels for common indoor and outdoor activities are depicted in Table 14-1.

Table 14-1
Typical Sound Levels in the Environment

Common Outdoor Activities	Noise Level (dB)	Common Indoor Activities
	110	Rock band
Jet fly-over at 300 meters (1,000 feet)	100	
Gas lawn mower at 1 meter (3 feet)	90	
Diesel truck at 15 meters (50 feet), at 80 kilometers per hour (50 miles per hour)	80	Food blender at 1 meter (3 feet) Garbage disposal at 1 meter (3 feet)
Noisy urban area, daytime Gas lawn mower at 30 meters (100 feet)	70	Vacuum cleaner at 3 meters (10 feet)

Table 14-1
Typical Sound Levels in the Environment

Common Outdoor Activities	Noise Level (dB)	Common Indoor Activities
Commercial area Heavy traffic at 90 meters (300 feet)	60	Normal speech at 1 meter (3 feet)
Quiet urban daytime	50	Large business office Dishwasher next room
Quiet urban nighttime	40	Theater, large conference room (background)
Quiet suburban nighttime	30	Library
Quiet rural nighttime	20	Bedroom at night, concert hall (background)
	10	Broadcast/recording studio
Lowest threshold of human hearing	0	Lowest threshold of human hearing

Source: Caltrans 1998.

Human Response to Changes in Noise Levels

Under controlled conditions in an acoustics laboratory, the trained, healthy human ear is able to discern changes in sound levels of 1 dB when exposed to steady, single-frequency signals in the mid-frequency range. Outside such controlled conditions, the trained ear can detect changes of 2 dB in normal environmental noise. It is widely accepted that the average healthy ear, however, can barely perceive noise level changes of 3 dB. A change of 5 dB is readily perceptible, and a change of 10 dB is perceived as twice or half as loud. As discussed previously, a doubling of sound energy results in a 3 dB increase in sound, which means that a doubling of sound energy (e.g., doubling the volume of traffic on a road) would result in a barely perceptible change in sound level.

Noise Descriptors

Additional units of measure have also been developed to evaluate the long-term characteristics of sound. The equivalent sound level (L_{eq}) is also referred to as the time-average sound level. It is the equivalent steady-state sound level that in a stated period of time would contain the same acoustical energy as the time-varying sound level during the same time period. The 1-hour A-weighted equivalent sound level, L_{eq} (h), is the energy average of the A-weighted sound levels occurring during a 1-hour period and is the basis for the County noise ordinance criteria.

People are generally more sensitive and annoyed by noise occurring during the evening and nighttime hours. Thus, another noise descriptor used in community noise assessments termed the Community Noise Equivalent Level (CNEL) was introduced. The CNEL scale represents a time-weighted, 24-hour average noise level based on the A-weighted sound level. The CNEL accounts for the increased noise sensitivity during the evening hours (7:00 p.m.–10 p.m.) and nighttime hours (10:00 p.m.–7:00 a.m.) by adding 5 dB and 10 dB, respectively, to the average sound levels occurring during the nighttime hours.

Sound Propagation

Sound propagation (i.e., the passage of sound from a noise source to a receiver) is influenced by several factors. These factors include geometric spreading, ground absorption, and atmospheric effects, as well as shielding by natural and/or man-made features.

Sound levels are attenuated at a rate of approximately 6 dB per doubling of distance from an outdoor point source due to the geometric spreading of the sound waves. Additional sound attenuation can result from man-made features such as intervening walls and buildings, as well as natural features such as hills and dense woods. Atmospheric conditions such as humidity, temperature, and wind gradients can temporarily either increase or decrease sound levels. In general, the greater the distance the receiver is from the source, the greater the potential for variation in sound levels due to atmospheric effects.

The existing environment of the proposed action includes rural, public, and agricultural land uses and associated noise generation. Traffic along freeways, highways, and local roadways also contributes to the existing noise environment. Due to the various land uses and noise sources, different levels of noise are present near the proposed HCP Permit Area and associated resource study area. Ambient noise levels tend to be lowest in the open, undeveloped areas that comprise much of Tulare County. Noise levels in the vicinity of the proposed action are typically the highest near major transportation facilities (Road 176, Avenue 376, Road 194, Road 196) serving the area.

Additionally, the site is not located in proximity to any airports. The nearest airport is Woodlake Airport located approximately 3.5 miles south of the proposed HCP Permit Area. The site is not located within the 60 dB CNEL noise contour of any airport and is not subject to aircraft noise in excess of regulatory limits.

Existing Ambient Noise Levels

Noise measurements were previously conducted for the proposed action as part of the *Southern California Edison's San Joaquin Cross Valley Loop 220 kV Transmission Line Project Draft Environmental Impact Report* (CPUC 2009) to determine the existing ambient noise levels within the resource study area. A 24-hour noise survey was conducted along the proposed HCP Permit Area as shown on Figure 14-1. Ambient Noise Levels measured at this location are presented in Table 14-2. As shown in Table 14-2, L_{dn} and CNEL noise levels of approximately 53 dBA were measured in the existing right-of-way (ROW), reflecting relatively low ambient noise levels.

Table 14-2
Ambient Noise Levels – 24-Hour Measurement

Hour	L_{eq}	L_{max}
12:00 a.m.	43.6	53.2
1:00 a.m.	43.1	48.6
2:00 a.m.	43.8	47.2
3:00 a.m.	43.2	53.8
4:00 a.m.	43.5	51.3
5:00 a.m.	46.1	63.5
6:00 a.m.	47.8	60.7
7:00 a.m.	46.9	53.3
8:00 a.m.	45.9	53.1
9:00 a.m.	53.0	72.9
10:00 a.m.	54.6	69.8
11:00 a.m.	51.1	71.6
12:00 p.m.	47.6	67.0
1:00 p.m.	46.4	59.3
2:00 p.m.	47.7	60.7
3:00 p.m.	51.3	80.2
4:00 p.m.	51.4	63.6
5:00 p.m.	50.6	61.8
6:00 p.m.	49.4	58.2
7:00 p.m.	47.8	57.6
8:00 p.m.	47.7	53.6
9:00 p.m.	47.5	53.3
10:00 p.m.	47.3	55.7
11:00 p.m.	44.9	54.5

Source: CPUC 2009.

In addition to 24-hour monitoring data collected as part of the existing ambient noise analysis, short-term, 10-minute average noise measurements were taken along the proposed HCP Permit Area. Figure 14-1 shows the 10-minute monitoring locations. Table 14-3 shows the L_{eq} and L_{max} for each measurement. As shown in Table 14-3, ambient L_{eq} noise levels ranged between 43.8–60.0 dBA in the resource study area. In general, vehicular traffic traveling along nearby roadways was the predominant noise source at these monitoring locations.

Table 14-3
10-Minute Average Ambient Noise Levels

Measurement Location	Time	L_{eq}	L_{max}	Description of Noise Sources
1. Along Road 156 near New Lattice Tower 14	10:45 a.m.	55.2	66.6	Primary noise source: Vehicle traffic along Road 156.
2. Along Filbert Road between New TSP Structure 39 and 40	11:10 a.m.	50.1	67.7	Primary noise source: Vehicle traffic along Filbert Road. Other noise sources observed included a rooster crowing and operation of a weed whacker at a nearby residence.
3. Along Avenue 296 near New TSP Structure 94	11:37 a.m.	60.0	76.4	Primary noise source: Vehicle traffic along Avenue 296.
4. At the intersection of Avenue 344 and Road 148 underneath existing 220-kilovolt (kV) transmission line.	12.56 p.m.	43.8	56.4	Primary noise source: Transmission line humming. Relatively little vehicle traffic was observed.
5. At the intersection of Avenue 313 and Road 148	2:07 p.m.	53.8	65.3	Primary noise source: Vehicles traveling along Avenue 313.

Source: CPUC 2009.

Sensitive Receptors

Sensitive noise receptors are facilities or areas (e.g., residential areas, hospitals, schools) where excessive noise levels would be considered an annoyance. Noise-sensitive receptors are distributed throughout the resource study area, and a description of the existing noise environment and sensitive noise receptors associated with the construction of the Covered Activities is presented as follows, including those identified in the Draft Environmental Impact Report (EIR) previously conducted for the project (CPUC 2009).

There are a number of residences located within 200 feet of the proposed HCP Permit Area. There are also rural residences scattered intermittently along the new ROW that would be acquired by Southern California Edison (SCE). Some of these residences are located within 50 feet of the proposed ROW (CPUC 2009).

Union Elementary School, on Road 148 just north of East Caldwell Avenue, is approximately 1,500 feet south of the Rector Substation. Mineral King Elementary School and Golden West High School are over 0.5 mile from the proposed HCP Permit Area's north/south portion. There are no schools located within one-quarter mile of the proposed HCP Permit Area.

Additionally, the east–west portion of the proposed HCP Permit Area would be constructed in proximity to several rural residences and would traverse undeveloped, agriculturally dominant land uses. Visitors to the two recreational facilities in the proposed action area—Lewis Ranch Stallion Station and Horse Corral Pack Station—may also be exposed to noise generated during construction. The Lewis Ranch Stallion Station is located approximately 0.76 mile north from

the east–west portion of the proposed HCP Permit Area; the Horse Corral Pack Station is located approximately 0.57 mile south from the east–west portion; and Sentinel Butte Valley is located approximately 1.3 miles south from the east–west portion of the HCP Permit Area (see Figure 17-2, Recreational Facilities).

Of the 13 County parks, Cutler Park is the only park located within 1 mile of the transmission alignment (see Figure 17-1, Recreational Facilities). Cutler Park, a 50-acre property, is located approximately 0.78 mile east of the north–south alignment near the community of Ivanhoe, along the St. John's River. The north–south portion of the proposed HCP Permit Area is located within 1 mile of two City of Visalia parks—St. John's Parkway and Mill Creek Park (Figure 17-2, Recreational Facilities).

The construction, maintenance, and operation of the Covered Activities included in the HCP would not expose new types of sensitive receptors to construction or operational noise sources beyond those identified in the Draft EIR (CPUC 2009), as the majority of the proposed transmission alignment would traverse agricultural and/or open space lands. Therefore, additional noise measurements were not required for this EA.

14.2 IMPACT ANALYSIS REGULATORY FRAMEWORK

The following federal, state, and local regulations pertaining to noise would apply to the proposed action.

Federal Regulations

U.S. Environmental Protection Agency

The U.S. Environmental Protection Agency (EPA) has indicated that residential noise exposure of 55– 65 dBA is acceptable when analyzing land use compatibility (EPA 1981); however, these guidelines are not regulatory. With regard to noise exposure and workers, the federal Occupational Safety and Health Administration (OSHA) establishes regulations to safeguard the hearing of workers exposed to occupational noise (29 CFR 1910.95 et seq.). OSHA specifies that sustained noise over 85 dBA (8-hour time-weighted average) can be a threat to workers' hearing, and if worker exposure exceeds this amount, the employer shall develop and implement a monitoring plan (29 CFR 1910.95 (d)(1)).

Federal Aviation Administration Standards

Enforced by the Federal Aviation Administration (FAA), Title 14, Part 150 prescribes the procedures, standards, and methodology governing the development, submission, and review of airport noise exposure maps and airport noise compatibility programs, including the process for evaluating and approving or disapproving those programs. Title 14 also identifies those land uses

which are normally compatible with various levels of exposure to noise by individuals. The FAA has determined that interior sound levels up to 45 dBA day–night average sound level (L_{dn}) (or CNEL) are acceptable within residential buildings. The FAA also considers residential land uses to be compatible with exterior noise levels at or less than 65 dBA L_{dn} (or CNEL). FAA regulations would apply to project-related helicopter noise.

State Regulations

California Noise Control Act of 1973

Sections 46000 through 46080 of the California Health and Safety Code, known as the California Noise Control Act of 1973, finds that excessive noise is a serious hazard to the public health and welfare and that exposure to certain levels of noise can result in physiological, psychological, and economic damage. It also finds that there is a continuous and increasing bombardment of noise in the urban, suburban, and rural areas. The California Noise Control Act declares that the state has a responsibility to protect the health and welfare of its citizens by the control, prevention, and abatement of noise. It is the policy of the state to provide an environment for all Californians free from noise that jeopardizes their health or welfare.

Local Regulations

Tulare County General Plan

Policy HS-8.2 of the Health and Safety Element of the updated Tulare County General Plan 2030 designates areas with an ambient noise level of 60 dBA L_{dn} (or CNEL) at the exterior of buildings to be noise-impacted. Policy HS-8.3 states that new development of residential or other noise-sensitive land uses is not permitted in noise-impacted areas unless effective mitigation measures are incorporated into the specific design of such projects to reduce noise levels to 60 dBA L_{dn} (or CNEL) or less within outdoor activity areas and 45 dBA L_{dn} (or CNEL) or less within interior living spaces. Noise level criteria applied to land uses other than residential or other noise-sensitive uses is required in Policy HS-8.5 to be consistent with Title 24 and the California Department of Health Services guidelines for community noise acceptability. According to Policy HS-8.8, new development of industrial, commercial, or other noise-generating land uses will not be permitted if resulting noise levels would exceed 60 dBA L_{dn} (or CNEL) at the boundary of areas planned and zoned for residential or other noise-sensitive land uses, unless determined to be necessary to promote the public health, safety, and welfare of the county. Policy HS-8.6 requires the county to utilize the California Land Use Compatibility Standards for Community Noise Environment (County of Tulare 2012).

The transmission line would traverse lands zoned for Extensive Agriculture (AE-40, AE-80), Foothill Agricultural (AF), Primary Flood Plain (F-1), Planning Development (PD), and Rural Residential (R-A-43) zoning designations. The Tulare County General Plan does not discuss the

permitting of transmission line facilities within these land use designations; however, the project applicant would obtain input from Tulare County regarding land use matters related to the siting of the proposed action prior to project construction.

Within the Tulare County Rural Valley Lands Plan, the proposed action would traverse parcels zoned by the Rural Valley Lands Plan as within the AE-40, AE-80, and Foothill Agriculture (AF), Primary Flood Plain (F-1), and Planned Development zoning designations. The Rural Valley Lands Plan does not discuss permitting transmission line facilities within these land use designations. Within the Tulare County Foothill Growth Management Plan, the proposed action would traverse parcels within the Development Corridor, Extensive Agriculture, Foothill Extension, and Valley Agriculture Extension Designations.

Tulare County Zoning Ordinance

Section 15.A.7(b)(13) of the Tulare County Zoning Ordinance prohibits the use of equipment in an urban residential setting that would create excessive noise detrimental to the health, safety, peace, morals, comfort and general welfare of persons residing in the neighborhood. In lower density residential and agricultural areas, Section 15.A.7 (a)(12) prohibits equipment or processes which create noise detectable to the normal senses off the property.

Tulare County does not have a noise ordinance and does not set specific restrictions on construction noise.

14.3 ENVIRONMENTAL CONSEQUENCES

14.3.1 Methodology for Impact Analysis

The resource study area was developed by reviewing available information on noise in the project vicinity and anticipated construction activities. This review was supplemented with information provided in the Draft EIR (CPUC 2009) including estimated increases in ambient noise levels and impacts to nearby sensitive receptors. Relevant information from the Draft EIR regarding noise impacts is hereby incorporated by reference and should be considered as part of the information upon which the noise analysis is based. Additionally, all mitigation measures, presented in this section as Environmental Commitments (ECs), were derived from the Draft EIR.

Additionally, evaluation of potential noise impacts from proposed construction, operation, and maintenance included reviewing relevant city and county noise standards and policies, characterizing the existing noise environment throughout the proposed HCP Permit area, and projecting noise from construction, operation, and maintenance of the proposed Covered Activities. Impacts were assessed by comparing the published noise levels of construction

equipment and operational activities to the ambient noise environment and significance criteria, based on applicable noise regulations.

Identifying the Threshold of Significance

For the purposes of this EA, impacts related to noise are considered significant if the proposed action would result in:

- A substantial temporary or periodic increase in the ambient noise levels in the HCP Permit Area or vicinity above levels existing without the project
- Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels
- A substantial permanent increase in ambient noise levels in the HCP Permit Area above levels existing without the project.

14.3.2 No Action Alternative

Direct and Indirect Effects

Under the No Action Alternative, the proposed action and HCP, including Covered Activities, would not be implemented, and noise levels would not be affected by development in the plan area. Noise levels would remain as presented under existing conditions. Under this alternative, the potential exists that future development in the plan area could occur that is compatible with existing land uses as delineated in the adopted General Plan, and would result in an increase in ambient noise levels. Land use and planning activities allowed under the current General Plan that would normally occur under the No Action Alternative include rural development, agricultural-related operations, some residential development, and capital improvement projects. These activities would cause a permanent change in ambient noise levels if implemented. Individual activities would be assessed for compliance with local policies and regulations within Tulare County or the City of Visalia, and would be required to prepare CEQA documentation as projects with discretionary actions are proposed. Projects would be individually required to mitigate any potentially significant noise impacts. Development under the No Action Alternative is expected to be consistent with General Plan policies and applicable noise regulations.

Determination

Under the No Action Alternative, the proposed action and HCP, including Covered Activities, would not be implemented, and no noise generation related to construction and operation of the Covered Activities would occur. Future development projects that would accommodate growth and activities as anticipated under the adopted General Plan may result in direct and indirect

impacts due to increases in ambient noise levels, which would be analyzed and reviewed under the County or City's discretionary and environmental review process.

14.3.3 Proposed Action Alternative

Direct and Indirect Effects

Impact NOI-1: A substantial temporary or periodic increase in the ambient noise levels in the HCP Permit Area or vicinity above levels existing without the project.

Construction activities requiring the operation of heavy off-road construction equipment, and on-road construction vehicles, during proposed action construction would result in short-term, temporary increases to ambient noise levels. Table 14-4 shows on-road and off-road construction equipment that would likely be required on site and noise levels associated with each piece of equipment measured at 50 feet from the source. Equipment anticipated for use during proposed action construction would generate noise levels ranging from 80–98 dBA. Higher noise level elevations would occur during activities such as drilling and foundation work for pole and tower installation.

Table 14-4
Typical Maximum Noise Levels from Construction Equipment

Construction Equipment	Description of Noise Sources
Line truck	88
Backhoe	80
Flatbed truck	88
Drill rig	98
Air compressor	81
Dozer	85
Air compressor	85
Mobile crane	83
Grader	85
Front-end loader	85
Water trucks	88
Cranes	83
Concrete trucks	88

Source: FTA 2006.

As shown in Table 14-3, 10-minute average ambient noise levels measured in the resource study area ranged from 55.2–60.0 dBA. When considering proposed construction activities and anticipated equipment use, it can be assumed that noise levels such as those shown in Table 14-4 would have the potential to result in direct impacts at nearby sensitive receptors including rural residences.

Worker commute vehicles and haul trucks transporting construction equipment and materials to the site during construction would also generate elevated off-site noise levels. Use of a helicopter would be required during conductor stringing of the 220 kV line facilities, including towers and poles. Operation of a light-duty helicopter can be expected to generate noise levels of approximately 80 dBA at 200 feet (CPUC 2009). As such, use of off-road construction equipment and helicopter operations would have the potential to result in indirect impacts nearby sensitive receptors. Equipment staging would occur at two laydown yards: Ivanhoe and Avenue 156. The Ivanhoe and Avenue 156 laydown areas that would be utilized have been previously constructed as part of the San Joaquin Cross Valley Transmission Line Project. From these laydown areas, some workers would drive to work areas along the HCP Permit Area to various construction sites. Large trucks would haul construction materials to the various locations along the HCP Permit Area and would also haul away demolished electrical equipment and excavated material and waste. Peak noise levels anticipated for on-road trucks and passenger vehicles would be approximately 75 dBA at 50 feet. As such, construction traffic would have the potential to cause temporary, indirect impacts associated with increases to ambient noise levels at sensitive receptors, including rural residences.

Additionally, construction would occur at each pole site in phases. First, holes would be drilled at the pole sites, concrete foundations would be poured, poles would be erected and conductoring would occur to install the line. Due to the phased nature of the construction process, equipment operating for any given phase would not remain in one place for an extended period of time. Because equipment would be consistently moving around from one location to another, no individual receptor would be subjected to construction noise levels for an extended period of time. Moreover, the majority of construction activities would be limited to the hours of 7 a.m. –5 p.m., Monday through Friday. If nighttime construction would be required between 8:00 p.m. – 6:00 a.m., noise levels during these hours could result in a significant indirect adverse impact to nearby residences. To ensure construction-related noise impacts are not adverse, EC NOI-1a and NOI-1b are provided as described below. These ECs would help reduce noise levels generated by construction equipment and would ensure that construction noise would not represent a significant nuisance to nearby receptors. Furthermore, these measures would aid in the reduction of groundborne vibration impacts as discussed under Impact NOI-2.

Environmental Commitments

The following ECs are incorporated into the Covered Activities to reduce the effects on the human environment associated with implementing the proposed action. Implementation of the following ECs would result in no significant adverse impact.

EC NOI-1a: SCE and/or its contractors shall employ the following noise reduction and suppression techniques during project construction to minimize the impact of temporary construction-related noise on nearby sensitive receptors:

- All construction equipment mufflers shall comply with manufacturers' requirements. If impact equipment such as jackhammers, pavement breakers, and rock drills are used during construction, hydraulically or electric-powered equipment shall be used whenever feasible to reduce noise associated with compressed-air exhaust from pneumatically powered tools. However, where pneumatically powered tool use is unavoidable, the construction contractor shall place exhaust mufflers on the compressed-air exhaust and external jackets on the tools themselves where feasible.
- Nearby residents shall be notified of the construction schedule and how many days they may be affected by construction noise prior to commencement of construction activities. Notification during conductor stringing activities that include helicopter usage shall include a schedule of predicted hovering times and locations as well as helicopter flight paths. Notices sent to residents shall include a project hotline where residents would be able to call and issue complaints. All calls shall be returned by SCE and/or its contractor within 24 hours to answer noise questions and handle complaints. Documentation of the complaint and resolution shall be submitted to the California Public Utilities Commission (CPUC) weekly.
- Idling of engines shall be minimized; engines shall be shut off when not in use except in cases where idling is required to ensure safe operation of equipment or when idling is necessary to accomplish work for which the piece of equipment was designed (such as operating a crane).
- Compressors and other small stationary equipment shall be shielded with portable barriers when operated within 100 feet of residences.
- Equipment staging and parking areas shall be located as far as feasible from residential schools and buildings.
- Haul truck operations and helicopter operations shall be prohibited during the evening and nighttime hours between 8:00 p.m.–6:00 a.m.

  (This measure corresponds to Mitigation Measure 4.10-4a (CPUC 2010).)

EC NOI-1b: In the event that nighttime (i.e., between 8:00 p.m.–6:00 a.m.) construction activity is determined to be necessary, a nighttime noise reduction plan shall be developed by SCE and submitted to the CPUC for review and approval. The noise reduction plan shall include a set of site-specific noise attenuation

measures that apply state-of-the-art noise reduction technology to ensure that nighttime construction noise and levels and associated nuisance are reduced to the most extent feasible.

The attenuation measures may include, but would not be limited to, the control strategies and methods for implementation that are listed below. If any of the following strategies are determined by SCE to not be feasible, an explanation as to why the specific strategy is not feasible shall be included in the nighttime noise reduction plan.

- Plan construction activities to minimize the amount of nighttime construction.
- Offer temporary relocation of residents within 200 feet of nighttime construction areas.
- Temporary noise barriers, such as shields and blankets, shall be installed immediately adjacent to all nighttime stationary noise sources (e.g., drilling rigs, generators, pumps, etc.).
- Install temporary noise walls that block the line of sight between nighttime activities and the closest residences.
- The notification requirements identified in EC NOI-1a shall be extended to include residences within 1,000 feet of pending nighttime construction activities.

  (This measure corresponds to Mitigation Measure 4.10-4b (CPUC 2010).)

Construction activities located in the City of Visalia would be limited to between the hours of 6 a.m.–7 p.m. on weekdays and between the hours of 9 a.m.–7 p.m. on weekends per the City's Municipal Code. In the City of Farmersville, construction activities would be restricted pursuant to the City's Municipal Code to between the hours of 6 a.m.–9 p.m. on weekdays and 9 a.m.–9 p.m. on weekends. Tulare County does not have a noise ordinance and does not set specific restrictions on construction noise. Fresno County restricts construction hours to between the hours of 6 p.m.–9 p.m. on weekdays and between the hours of 7 a.m.–5 p.m. on Saturdays and Sundays. If SCE determines that different work hours or days would be necessary that would violate a local noise ordinance, it would be required to obtain noise ordinance variances from the jurisdictions where the work would take place pursuant to regulatory requirements. Therefore, construction activities would not conflict with applicable noise ordinances and plans, and no significant adverse impact would result.

Biological Resources

In addition to potential impacts to sensitive receptors, construction of the proposed action would have the potential to disturb or displace wildlife in and adjacent to construction areas due to elevated noise levels. However, potential disturbance and mortality of common wildlife due to construction-related noise does not rise to a level of significance, and ECs implemented to avoid, minimize, and mitigate construction-related impacts to special-status wildlife species would also be protective of common wildlife species as identified in Chapter 8, Biological Resources – Special-Status Species. Additionally, the HCP is being developed to implement a conservation plan that will avoid, minimize, and compensate for potential adverse effects on threatened and endangered species that may result from Covered Activities; accommodate SCE's construction and operation of the Covered Activities; and provide a basis for take authorization pursuant to the Endangered Species Act. Refer to Chapter 8, Biological Resources – Special-Status Species, for more information on the HCP.

Impact NOI-2: Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.

In instances when solid rock is found within the HCP Permit Area where construction work is required, blasting activities may be employed, particularly during road construction, grading, and foundation work, resulting in groundborne vibration. Blasting sites, if necessary, have not been identified at this time; therefore, indirect impacts to sensitive receptors and nearby structures resulting from groundborne vibration cannot be fully known. However, prior to blasting, a person licensed by the Federal Bureau of Alcohol, Tobacco, and Firearms would assess the area and take site measurements in order to engineer the blast for a safe and effective explosion. Furthermore, pre-blast notification would be made to the local fire department, residents, utilities, and others potentially affected by blasting operations. In addition to these protocols, implementation of EC NOI-2 as described below, would be implemented to ensure appropriate performance criteria are met such that indirect vibration impacts associated with blasting would not result in adverse effects.

Environmental Commitments

The following ECs are incorporated into the Covered Activities to reduce the effects on the human environment associated with implementing the Cross Valley Line. Implementation of the following ECs would result in no significant adverse impact.

EC NOI-2: SCE and/or its contractors shall develop and implement a Blasting Plan for construction activities. The plan shall be submitted for review and approval by the CPUC. At a minimum, the plan shall include the following measures:

- Evidence of licensing, experience, and qualifications of blasters.
- A Blast Survey Workplan shall be prepared by the blaster. The plan shall establish a vibration and settlement PPV threshold criteria limits of 0.5 inches per second (in/s) in order to protect structures from blasting activities, and shall identify specific monitoring points. At a minimum, a pre-blast survey shall be conducted of any potentially affected structures and underground utilities within 500 feet of a blast area, as well as the nearest commercial or residential structure, prior to blasting.
- The survey shall include visual inspection of the structures; documentation of structures by means of photographs, video, and a level survey of the ground floor of structures or the crown of major and critical utility lines; and these shall be submitted to the City. This documentation shall be reviewed with the individual owners prior to any blasting operations. The CPUC and impacted property owners shall be notified at least 48 hours prior to the visual inspections.
- Scaled drawings of blast locations, and neighboring buildings, streets, or other locations that could be inhabited.
- Blasting notification procedures, lead times, and list of those notified. Public notification to potentially affected vibration receptors describing the expected extent and duration of the blasting.
- Description of a blast vibration monitoring program.
- If the vibration and settlement criteria of 0.5 in/s PPV is exceeded at any time or if damage is observed at any of the structures or utilities, then blasting shall immediately cease and the CPUC immediately notified. The stability of any structures, creek canals, etc. shall be monitored, and any evidence of instability due to blasting operations shall result in immediate termination of blasting. The blaster shall modify the blasting procedures or use alternative means of excavating in order to reduce the vibrations to below the threshold values, prevent further settlement, slope instability, and/or to prevent further damage.
- Post-construction monitoring of structures shall be performed to identify (and repair if necessary) all damage, if any, from blasting vibrations. Any damage

shall be documented by photographs, video, etc. This documentation shall be reviewed with the individual property owners.

- Reports of the results of the blast monitoring shall be provided to the CPUC, the local fire department, and owners of any buried utilities on or adjacent to the site within 24 hours following blasting. Reports documenting damage, excessive vibrations, etc. shall be provided to the CPUC and impacted property owners.

  (This measure corresponds to Mitigation Measure 4.10-1 (CPUC 2010).)

Implementation of EC NOI-2 would result in no significant adverse impact.

Other temporary sources of groundborne vibration and noise during construction would result from operation of conventional heavy construction equipment such as drill rigs, bulldozers, and loaded haul trucks. Typical PPV levels from drill rigs and bulldozers measured at 25 feet from the source are approximately 0.089 inches per second while typical PPV levels from loaded haul trucks are approximately 0.076 inches per second at 25 feet (FTA 2006). These vibration levels would not have the potential to cause structural damage to nearby buildings. However, they could potentially be perceptible at residences or other sensitive uses in the immediate vicinity of the HCP Permit Area.

Construction activities would not be concentrated at the same location for an extended period of time; rather, they would progress in a linear fashion along the proposed action alignment such that an individual receptor would not be exposed to groundborne vibration for longer than a few days. Therefore, construction activities would result in no significant adverse impact regarding groundborne vibration and noise generation.

Biological Resources

See discussion of Impact NOI-1 above. Construction activities would result in no significant adverse impact regarding groundborne vibration and noise generation following implementation of identified ECs and compliance with the HCP regarding Covered Activities.

Impact NOI-3: A substantial permanent increase in ambient noise levels in the HCP Permit Area above levels existing without the project.

Noise generated from corona discharge along high-voltage transmission lines in wet conditions would be the primary concern associated with long-term operational noise impacts.

The term corona is used to describe the breakdown of air into charged particles caused by the electrical field at the surface of conductor. Audible noise levels generated by corona discharge

vary depending on weather conditions as well as voltage of the line. Wet weather conditions often increase corona discharge due to accumulation of raindrops, fog, frost, or condensation on the conductor surface which causes surface irregularities, thereby promoting corona discharge.

Based on information provided in the Draft EIR, corona noise levels that would be generated by the proposed action during wet conditions would be approximately 37 dBA at the edge of the existing ROW and approximately 35 dBA at the edge of the new ROW to be acquired (CPUC 2009). Assuming that the noise levels presented above would remain constant for 24 hours, the CNEL would be approximately 44 dBA at the edge of the existing ROW and 42 dBA at the edge of the new ROW during wet conditions. These noise levels would not violate exterior noise standards set forth in the Tulare County General Plan, the City of Visalia Municipal Code, or the Farmersville Municipal Code. Therefore, operation of the proposed transmission line would not conflict with applicable noise ordinances and plans, and no significant adverse impact would occur.

In addition to corona discharge, operation and maintenance activities resulting in elevated noise levels would include use of a light-duty truck and/or helicopter to conduct routine annual inspections of the transmission line and associated access/spur roads. Use of a light duty truck and/or helicopter would temporarily increase noise levels in the immediate vicinity of the proposed action; however, these activities would occur infrequently and would not result in any long-term notable noise level increases. Therefore, maintenance activities would not conflict with applicable noise ordinances and plans, and no significant adverse impact would occur.

Additionally, the proposed action would not be located within a proposed or existing airport land use area, within 2 miles of a public airport or public use airport, or within the vicinity of a private airstrip; therefore, no significant adverse impact would result regarding airport or aircraft-related noise.

Biological Resources

See discussion of Impact NOI-1 above. O&M activities would result in no significant adverse impact to wildlife.

Cumulative Effects of the Proposed Action

Impact NOI-1 through Impact NOI-3

The effects of the proposed action, when considered with other projects in the region, would result in a cumulative impact to noise. Present and probable future projects in the vicinity of the HCP Permit Area are shown on Figure 3-1, Cumulative Projects, which include the Big Creek Rebuild project consisting of the installation of approximately 14 double-circuit lattice towers and 42 double-circuit, tubular steel poles. The Big Creek Rebuild project, when considered in

combination with the proposed action, would not result in a cumulatively considerable construction effect because this project would be completed prior to permit issuance for the proposed action. Additionally, following completion of construction activities, operation of the Big Creek Rebuild project would not result in significant permanent increases to existing ambient noise levels. As such, operational noise effects of this project, in combination with the proposed action, would not result in a cumulatively considerable net increase in noise levels, and effects would not be adverse.

Some present and foreseeable future projects as shown on Figure 3-1 are anticipated to result in a potentially significant impact associated with construction equipment and blasting noise and vibrations; however, these impacts would be reduced to less than significant with implementation of identified ECs. Operation and maintenance activities associated with the proposed action would not result in significant permanent increases to existing noise levels, and would therefore not be considered a significant contribution to a cumulatively considerable effect.

If construction of any reasonably foreseeable future projects were to occur simultaneously with construction of the Covered Activities, the potential for impacts to nearby receptors from construction noise would increase. However, as discussed previously, the human ear perceives noise in a logarithmic fashion rather than a linear fashion. Therefore if a new noise source is introduced near an existing source and the two produce equal noise levels, the ambient noise level would increase by approximately three dB rather than doubling. Based on this information, even if the Covered Activities would be constructed simultaneously with another project in the immediate vicinity, substantial increases in noise levels at nearby receptors would not be expected to occur.

Therefore, when considered in combination with these projects, the proposed action's incremental contribution to temporary noise impacts from construction, with proposed ECs, would not be cumulatively considerable. Furthermore, the primary noise source from operation of the proposed transmission line would be corona discharge; however, corona discharge would not substantially increase ambient noise levels and would therefore not result in a cumulatively considerable contribution to noise impacts. Under existing conditions, noise associated with corona discharge is currently higher than average levels due to the existing line's capacity overloading; therefore, installation of a new, upgraded line with an increased voltage capacity would reduce noise generation associated with corona discharge. Moreover, maintenance activities would include infrequent inspection of the Cross Valley Line and would also not result in a cumulatively considerable contribution to noise impacts.

Determination

Construction, operation, and maintenance of the proposed action would not result in a cumulatively considerable impact.

14.4 REFERENCES CITED

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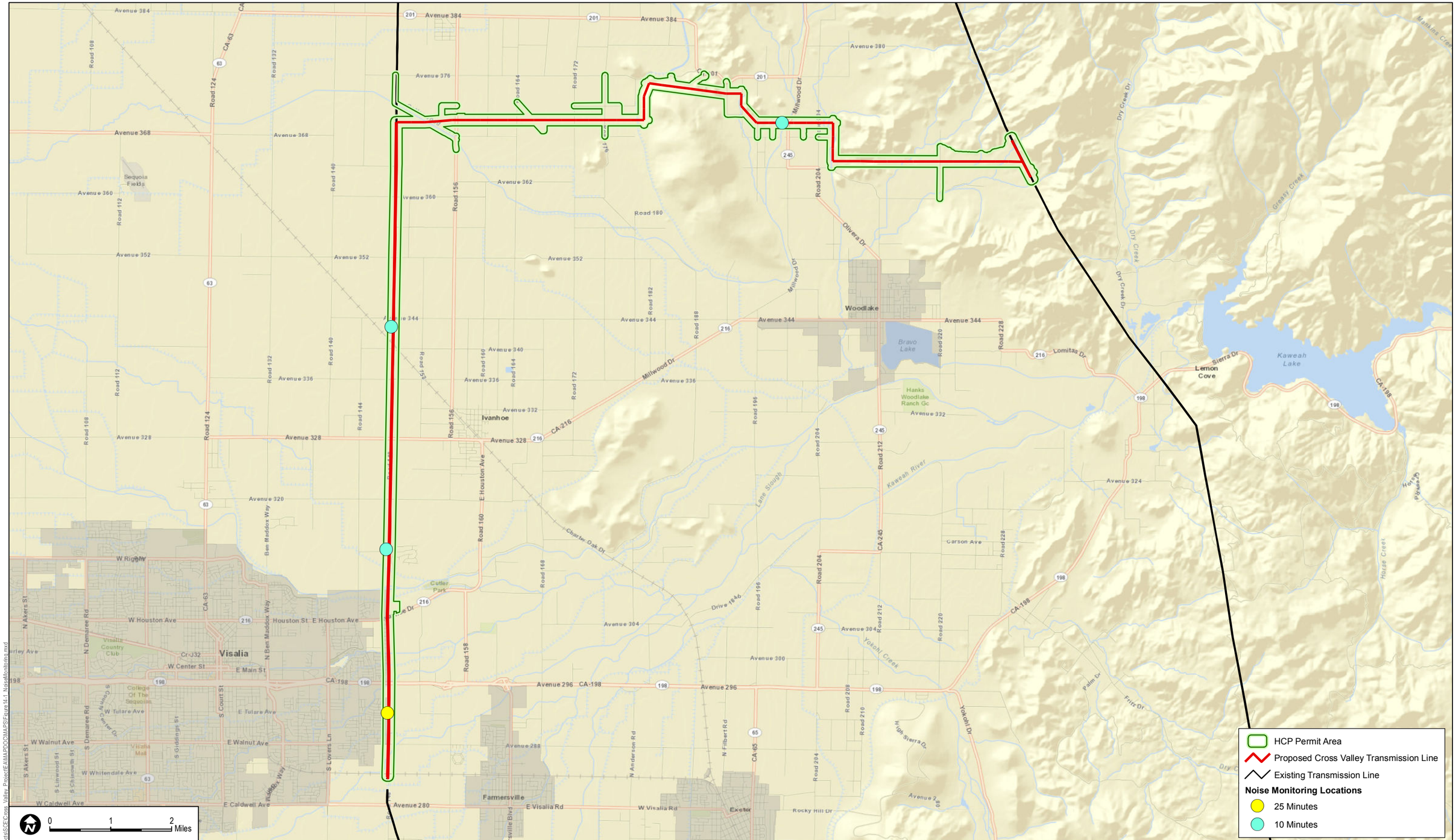

SOURCE: SCE 2013, ESRI Data 2010,

FIGURE 14-1

Noise Monitoring Locations

EA

CROSS VALLEY TRANSMISSION LINE HABITAT CONSERVATION PLAN ENVIRONMENTAL ASSESSMENT

Path: \\duda\ea-fba\GIS\dat\Projects\SCE\Cross_Valley_Project\EA\MAPDOC\MAPS\Figure14-1_NoiseMonitoring.mxd

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CHAPTER 15.0
VISUAL RESOURCES

This chapter describes the existing visual resources in the vicinity of the proposed action, the associated regulatory framework, and evaluates the potential environmental consequences that could result from each alternative discussed in Chapter 2.

Public and agency comments received during early public scoping and incorporated by reference into this analysis (see Sections 1.3, Public and Agency Involvement, and 1.4, Relationship of EA to Other Environmental Documents) included concerns regarding scenic areas and highways, scenic views, and visual impacts to urban areas.

15.1 AFFECTED ENVIRONMENT

This section describes the existing setting in the resource study area and identifies the resources that could be affected by the proposed action. For the purposes of this analysis, the resource study area for direct effects comprises the HCP Permit Area plus a 1,000-foot buffer. For purposes of visual resources, however, the resource study area for indirect effects encompasses the landscapes directly affected by facilities proposed under each of the action alternatives and the surrounding areas that would be within view of the transmission line components within 2 miles since that is the longest unobstructed view corridor in the resource study area in which power line structures might be visible by the unaided human eye. The visual analysis focuses on views from publicly accessible areas such as travel routes; local parks; and county, state, and federal recreational areas.

The visual character of northwestern Tulare County is characterized by features typical of the San Joaquin Valley, including agricultural lands, grasslands, arid plains, orchards, oak savannah, vernal pools, valley sink scrub, saltbush, and freshwater marsh. Tulare County is typically rural in character, with open pastures and scattered ranches and residences. The San Joaquin Valley is bordered on the west by the Coast Ranges and on the east by the southern portion of the Sierra Nevada (CRA 2012).

In the resource study area, much of the historic native grassland, woodland, and wetland have been converted to farmland as a result of the growth of agriculture in the San Joaquin Valley(CRA 2012). The agricultural landscape is dominated by crops and livestock (primarily oranges, grapes, alfalfa, corn, walnuts, peaches, almonds, plums, and cattle) and other ancillary facilities, including outbuildings, tractors, irrigation, and drainage work (Tulare County Agricultural Commissioner 2010).

Though the area is typically rural in character, there are several developed areas in the vicinity, including the Cities of Visalia and Farmersville to the southwest and the community of Lemon Cove to the east. The visual resources analysis contained herein is particularly focused along the east–west alignment, which does not currently contain an existing transmission or right-of-way (ROW).

Topography in the valley is uniformly flat; as a result, human-made features (including poles and lines for electricity and phones, blow off and air valves for underground water pipelines, residential and agricultural structures, fencing, elevated roadway, bridges, levees, canals, highway and local road signage, and other commercial signage) are visible in both near-field and far-field distances. Existing transmission lines, as well as other existing utility structures, are established features within the resource study area's landscape.

Existing Views

Figure 15-1 illustrates eight photo locations from which existing views are represented. Figures 15-2–15-5 present a set of photographs taken from representative vantage points in the resource study area that portray the existing visual character of the area. The photographs depicting viewsheds are limited in the sense that they provide only several fixed viewpoints and cannot demonstrate all views of or from the transmission line sites or along the site's perimeter.

The HCP Permit Area along the east–west alignment begins at mile 10.8 and would proceed in a generally easterly direction for approximately 12.2 miles until it reaches the existing Big Creek 3–Springville 220-kilovolt (kV) transmission line at a point approximately 52 miles south of Big Creek Powerhouse No. 3. The first 4 miles of the proposed ROW along the east–west alignment would be generally characterized by flat terrain, primarily used for orchards. Figures 15-2 and 15-3 present views from four viewpoints along the western portion of this part of the alignment. View A in Figure 15-2 is a westerly view from the alignment area towards the California Public Utilities Commission (CPUC)-approved action. The view of the area is panoramic and includes open undeveloped land and trees. Transmission lines are faintly visible in the distance. View B in Figure 15-2 is a northeasterly view from the alignment area and includes orchards. Figure 15-3, Views C and D are southwesterly and southern views of the alignment where it crosses Road 156. As shown in these photos, views are generally panoramic and open but of short duration and include orchards, crops, and structures.

After the alignment crosses the Friant–Kern Canal, the terrain becomes slightly hilly terrain and is primarily used for grazing; cows are often part of the landscape. For the next 5 miles, the alignment would follow the northern base of Colvin Mountain, passing near the community of Elderwood, traversing State Route 245 (SR-245) and entering into the foothills of the Sierra Nevada. The alignment would then cross through the foothills for approximately 3 miles until reaching the existing Big Creek 3–Springville 220 kV transmission line. In summary, the visual quality is considered representative of the rolling grassland foothills of the Sierra Nevada.

SR-201 is an east–west state highway that runs east from SR-99 at Kingsburg in Fresno County to SR-245. The proposed transmission line would run parallel approximately .075 mile to the south of SR-201 for roughly 7 miles before SR-201 merges with SR-245. Traffic volumes on

SR-201 in the resource study area are low (1,150 vehicles per day) (TCAG 2005) and views are generally panoramic and open but of short duration. Motorists along SR-245 would have views of the proposed HCP Permit Area. Figure 15-4, Views E and F, presents the view from SR-201 near the intersection of Road 192, looking southwest and southeast, respectively, toward the proposed alignment. The represented views are generally panoramic and open but of short duration and include orchards, crops, and at least two structures. Several buildings are located along both sides of SR-201 and consequently, vegetation and structures in the foreground would partially to fully screen views of the proposed action from motorists on SR-201.

The proposed alignment crosses SR-245, a north–south state highway that stretches from SR-198 to SR-180 near Sequoia Lake in the Sierra Nevada. The proposed alignment would cross the highway near Cottonwood Creek in Tulare County. Traffic volumes on SR-245 are low (average 1,400 vehicles per day) (TCAG 2005). Motorists along SR-245 would have views of the HCP Permit Area. Figure 15-5, View G, presents the view from SR 245 near 36940 Millwood Drive, looking northwest toward the proposed alignment. This view is representative of the area and includes orchards, farmland, and hills. Orchards, crops, and several buildings are located along both sides of SR-245. Consequently, vegetation and structures in the foreground and existing poles and distribution infrastructure would partially to fully screen views of the proposed transmission line from motorists on SR-245. Figure 15-5, View H, presents the view from Road 204, approximately 0.25 mile north of the corner of Avenue 368, looking northeast toward the foothills of the Sierra Nevada. This view includes undeveloped land and hills, and the mountains are not visible in the limited viewshed. Views of the proposed alignment area are generally panoramic and open but of short duration.

Sensitive Viewers

Viewer types and exposure conditions vary in the resource study area. Public viewer groups evaluated include motorists along SR-245 and SR-201 and visitors to the park and recreational facilities in the proposed HCP Permit Area. There are three parks and two recreation areas located within 1 mile of the transmission alignment: St. John's Parkway, Cutler Park, Mill Creek Park, Lewis Ranch Stallion Station, and Horse Corral Pack Station.

St. John's Parkway is located approximately 0.5 mile west of the north–south portion of the HCP Permit Area, at the intersection of N. Ben Maddox Way and E. St. John's Parkway in Visalia.

Cutler Park, a 50-acre property, is located approximately 0.78 mile east of the north–south alignment near the community of Ivanhoe, along the St. John's River.

Mill Creek Park is located approximately 0.89 mile west of the north–south portion of the HCP Permit Area, at the intersection of N. Lovers Lane and Mill Creek Parkway in Visalia. The park includes picnic tables, barbeques, multipurpose fields, a walking path, open play areas, and a soccer field.

The Lewis Ranch Stallion Station is located approximately 0.76 mile north from the east–west portion of the proposed HCP Permit Area, and the Horse Corral Pack Station is located approximately 0.57 mile south from the east–west portion.

Views of the proposed alignment area from these three parks and two recreation facilities are generally obstructed by vegetation and terrain. Despite the moderate number of views, viewer exposure would be considered low due to the limited visibility and low view duration and the nature of the recreation activities, which would result in the recreationists being in motion and moving throughout the area, not confined to the recreation facility.

There are no national or state parks located within 1 mile of the transmission alignment.

15.2 IMPACT ANALYSIS REGULATORY FRAMEWORK

Federal Regulations

Aesthetics and visual resources are regulated indirectly through a variety of federal laws and programs. For example, the federal government does not explicitly regulate visual resources, but recognizes their value and preserves them through the National Park, National Wildlife Refuge, National Monument, and National Scenic Byway systems. The HCP Permit Area is not visible from these areas, however. Direct regulation of visual resources is provided via state and local regulations, as described below.

State Regulations

The following state regulations pertaining to visual resources would apply to the proposed action.

California Scenic Highway Program

In 1963, the California legislature created the Scenic Highway Program to protect scenic highway corridors from changes that would diminish the aesthetic value of lands adjacent to the highways. The state regulations and guidelines governing the Scenic Highway Program are found in the Streets and Highways Code, Section 260 et seq. A highway may be designated as "scenic" depending on how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the travelers' enjoyment of the view.

There are no officially designated scenic highways in the HCP Permit Area. No portion of the proposed action would be visible from a designated state scenic highway (DOT 2012).

California Public Utilities Commission

California Public Utilities Code Section 320 requires that all new or relocated electric and communication distribution facilities within 1,000 feet of an officially designated scenic highway and visible from that highway be buried underground where feasible and not inconsistent with sound environmental planning. General Order 131-D defines distribution as "…a line designed to operate under 50 kV." The proposed transmission line would not be located within 1,000 feet of an eligible state scenic highway; furthermore, this code is not applicable as the proposed transmission line would be 220 kV, over the 50 kV threshold.

Local Regulations

The following local/regional regulations pertaining to visual resources would apply to the proposed action.

Tulare County General Plan

The following goals and policies identified in the Tulare County General Plan would be applicable to the proposed action (County of Tulare 2010):

Scenic Landscapes Element

Goal SL-1: To protect and feature the beauty of Tulare County's views of working and natural landscapes.

Policy LS-1.1: **Natural Landscapes.** During review of discretionary approvals, including parcel and subdivision maps, the County shall as appropriate, require new development to not significantly impact or block views of Tulare County's natural landscapes. To this end, the County may require new development to:

- Be sited to minimize obstruction of views from public lands and rights-of-ways,
- Be designed to reduce visual prominence by keeping development below ridge lines, using regionally familiar architectural forms, materials, and colors that blend structures into the landscape,
- Screen parking areas from view,
- Include landscaping that screens the development,
- Limit the impact of new roadways and grading on natural settings, and
- Include signage that is compatible and in character with the location and building design.

Policy LS-1.2: **Working Landscapes.** The County shall require that new non-agricultural structures and infrastructure located in or adjacent to croplands, orchards, vineyards, and open rangelands be sited so as to not obstruct important viewsheds and to be designed to reflect unique relationships with the landscape by:

- Referencing traditional agricultural building forms and materials,
- Screening and breaking up parking and paving with landscaping, and
- Minimizing light pollution and bright signage.

Goal SL-1: To protect the scenic views for travelers along the County's roads and highways.

Public Services and Facilities Element

Goal PFS-9: To ensure all areas of the County are provided with gas and electric service.

Policy PFS-9.4: **Power Transmission Lines.** The County shall work with the Public Utilities Commission and power utilities in the siting of transmission lines to avoid interfering with scenic views, historic resources, and areas designated for future urban development.

Tulare County Foothill Growth Management Plan

The following goals and policies identified in the Tulare County Tulare County Foothill Growth Management Plan (County of Tulare 1981a) would be applicable to the proposed action:

Goal FGMP-1: To maintain the natural beauty of the foothills while allowing focused growth in identified growth areas.

Policy FGMP-1.5: **Preserving Visual Resources.** The County shall encourage new development be designed in a manner that preserves the visual quality of the foothill setting by encouraging the use of curvilinear streets, vegetation reestablishment on cuts and fills, cluster development, and housing site locations that blend into the landscape rather than becoming a focal point.

Goal FGMP-6: Provide local protection of scenic highways and roads within the Foothills.

Policy FGMP-6.4: **Development Within Scenic Corridors.** The County shall require that projects located within a scenic corridor be designed in a manner, which does not detract from the visual amenities of that thoroughfare. The County shall support through the use of its authority and police powers,

the design of infrastructure that minimizes visual impacts to surrounding areas by locating roadways in areas that minimize the visual impact on rural and natural places whenever feasible.

Tulare County Zoning Ordinance

The Tulare County Zoning Ordinance uses overlay zones to protect particular natural or cultural features, including scenic views. Overlay zones build on the underlying zoning by establishing additional or stricter standards and criteria that apply in addition to the standards of the underlying zone districts. The purpose of the Scenic Corridor (SC) overlay zone is to "preserve and protect the scenic quality of the immediately visible land area adjacent to those scenic highways and scenic roads established by the Tulare County General Plan, and to prevent visual obstructions of the extended view from such scenic highways and roads" (County of Tulare 1981b). The proposed action would not traverse parcels zoned SC.

City of Visalia General Plan

The 3-mile stretch of highway along west SR-198 between SR-99 and Akers Road is designated as a scenic corridor by the City of Visalia General Plan. This "rural gateway" to Visalia contributes to the City's unique image as a "non-Highway 99" valley town. Consisting of Municipal Airport lands, Plaza Parks lands, and rural landscapes, the corridor's predominant land use is agriculture and its character consequently changes between seasons and years (City of Visalia 1996).

The City of Visalia General Plan has additional goals and policies relating to scenic resources that may be applicable to the proposed action and alternatives (City of Visalia 1979, 1996):

Historic Preservation Element

Goal II, Policy 2: The undergrounding of utility lines shall be pursued and encouraged.

Land Use Element

Implementing Policy 1.1.4: Work with utilities and transportation companies to landscape power line and railroad right-of-ways throughout the community and to underground utilities and abandoned railroad spurs where possible.

Implementing Policy 1.1.5: Develop land use and site design measures for areas adjacent to high-voltage power facilities.

Implementing Policy 1.1.11: Develop scenic entryways (gateways) and roadway corridors into the City through special setback and landscape standards, open space and park development,

and/or land use designations. Gateways and entryways to be considered should include: Avenue 272/Lovers Lane; St. John's River/Dinuba Highway; State Highway 198/Road 152; Caldwell/Parkway; State Highway 198 (Mcauliff to Road 152); Caldwell (Divisadero to Road 152); Avenue 272 (Akers to Road 152);.

15.3 ENVIRONMENTAL CONSEQUENCES

15.3.1 Methodology for Impact Analysis

The assessment of effects on aesthetics was based on the preliminary siting plan for the proposed Cross Valley Line, evaluation of existing conditions (i.e., existing views in the vicinity), and a visual simulation (Figure 15-6). For all alternatives presented in Chapter 2, changes to views were estimated by comparing (using geographic information system (GIS) data, site photos, and a visual simulation) existing views and potential changes to views. To evaluate potential impacts related to visual resources, photo location points were selected to represent a range of viewers, distance zones, and viewing angles. Photos were taken from selected observation points to identify the baseline visual setting. These photos are then contrasted with the visual simulation of the transmission line to determine if the transmission line would result in visual impacts as established by the thresholds of significance.

Identifying the Threshold of Significance

For the purposes of this Environmental Assessment (EA), an alternative would have a significant impact on visual resources if it would:

- Substantially degrade the existing visual character or quality of the HCP Permit Area and its surroundings
- Create a new source of substantial light and glare that would adversely affect day or nighttime views in the HCP Permit Area.

15.3.2 No Action Alternative

Direct and Indirect Effects

Under the No Action Alternative (i.e., the future condition without the proposed Incidental Take Permit (ITP)), the proposed HCP and Covered Activities would not be implemented. No new facilities would be constructed and existing facilities would not be altered, expanded, or demolished. Existing visual resources would not be altered by this alternative and would remain as they currently exist unless altered by other projects. Implementation of this alternative would not affect scenic vistas, scenic resources, or the existing visual character of the surrounding area, and would not create any additional source of light or glare.

The visual character of northwestern Tulare County is characterized by features typical of the San Joaquin Valley, including agricultural lands, grasslands, arid plains, orchards, oak savannah, vernal pools, valley sink scrub, saltbush, and freshwater marsh. In the resource study area, much of the historic native grassland, woodland, and wetland have been converted to farmland, as a result of the growth of agriculture in the San Joaquin Valley. Existing transmission lines, as well as other existing utility structures, are established features within the resource study area's landscape setting.

Under the No Action Alternative (i.e., the future condition without the proposed HCP permit), the Cross Valley Transmission Line will not be constructed; however, the projects discussed in Chapter 3, and shown on Figure 3-1, Cumulative Projects, could be developed. Because these projects are not yet in the environmental planning stage, the specific visual characteristics are not known. However, in general, most future visual changes from the proposed cumulative projects would result in a change of visual character on each project site, particularly for the sites that are currently vacant or used for agriculture. Infrastructure development projects, such as roadway improvements and water and sewer pipeline improvements, likely under the future condition without the proposed HCP permit could also result in alterations to visual resources. Impacts associated with individual future projects would be addressed by the California Environmental Quality Act (CEQA) on a case-by-case basis and would potentially provide mitigation for any impact to visual resources, including scenic resources and views. Under the No Action Alternative, the proposed action would not contribute to changes to visual resources or character. Therefore, the No Action Alternative would not be cumulatively considerable, and would not result in an impact to visual resources.

Determination

Under the No Action Alternative, the proposed HCP and permit, including Covered Activities, would not be implemented, and no Cross Valley Transmission Line would be constructed. Therefore, there visual resources would not be adversely affected under the No Action Alternative.

15.3.3 Proposed Action Alternative

Direct and Indirect Effects

The Covered Activities under the HCP include construction of 12.2 miles of a new transmission line until it reaches the existing Big Creek 3–Springville 220 kV transmission line. Construction is anticipated to take 1 year and would include day and nighttime construction. Once installation is complete, operation and maintenance would be administered as necessary and as described in Chapter 2, Project Description.

Impact VIS-1: Substantially degrade the existing visual character or quality of the HCP Permit Area and its surroundings.

Construction-related impacts to visual quality would result from the presence of construction equipment, materials, and work crews along the transmission line corridor and on local access roads and staging areas. Crews would be required to maintain clean work areas as they proceed along the line and would not leave any debris behind at any stage of construction. The construction impacts to visual quality would be relatively short-term (approximately 12 months) and spread out along different portions of the proposed alignment. Construction of the transmission line would require temporary staging and storage areas known as laydown yards to store equipment and materials during the construction process. Two laydown yards would be used for construction of the transmission line, ranging from 10–20 acres each. Material and equipment staged at these laydown yards would include steel bundles, tubular poles, palletized bolts, construction vehicles and faculties, and crew vehicles. The staging areas would be screened from the public by the fences surrounding the staging area; nonetheless, portions of the staging areas could be visible above and/or through the fences. Therefore, while the staging area would only be used on a temporary basis, adverse visual impacts associated with operation of these temporary sites could occur during the approximately 12-month construction period.

State Route 245 and 201

As noted above, the proposed alignment would be intermittently in view from SR-201 for approximately 7 miles and would cross SR-245 near Cottonwood Creek in Tulare County. The proposed action includes construction of 12.2 miles of a new transmission line until it reaches the existing Big Creek 3–Springville 220 kV transmission line. Construction would involve installation of 15 double-circuit lattice towers and 140 double-circuit, tubular steel poles. New tubular steel poles would introduce vertical lines into this horizontal landscape (i.e., relatively flat terrain and low-lying vegetation and open space). Structures would range from 120–160 feet in height. This would create moderate view blockage and increased structural prominence would result in a high degree of visual contrast. A simulated view of the proposed alignment from SR-245 is provided in Figure 15-6. As shown in the visual simulation, the new tubular poles would be fewer in number and would have a simpler, more streamlined profile. Generally, tubular steel poles have a smaller visual impact than lattice steel towers. Lattice steel towers have a greater visual impact because of their large base area and geometric forms, especially when seen at foreground distances. The proposed Cross Valley Transmission Line would be visible within the existing agricultural landscape and would introduce additional industrial character features into the landscape. As shown in Figure 15-6, the proposed Cross Valley Transmission Line would be visible to motorists but would not represent a significant adverse contrast to existing views. The southerly view from SR-201 would be similar in that the proposed structures would be the same as represented in Figure 15-6 and intermittently available. This view would not represent a

significant adverse contrast to existing views. Furthermore, implementation of ECs VR-2 and VR-3 would reduce visual impacts from SR-245 and SR-201 and no significant adverse impact would occur.

Environmental Commitments

The following environmental commitments (ECs) are incorporated into the Covered Activities to reduce the effects on the human environment associated with implementing the Cross Valley Transmission Line. Implementation of the following ECs would result in no significant adverse impact.

EC VR-1: Reduce visibility of staging areas. All staging areas shall be appropriately located away from areas of high public visibility. If visible from nearby roads, residences, public gathering areas, recreational areas, facilities, or trails, construction sites and staging areas shall be visually screened using temporary screening fencing. Fencing shall incorporate aesthetic treatment through use of appropriate, non-reflective materials, such as chain-link fence with light brown vinyl slats. Southern California Edison (SCE) shall submit final construction plans demonstrating compliance with this measure to the California Public Utilities Commission (CPUC) for review and approval at least 60 days prior to the start of construction.

(This measure corresponds to Mitigation Measure 4.1-2 (CPUC 2010).)

EC VR-2: **Treat Surfaces with Appropriate Colors, Finishes, and Textures.** SCE shall apply surface coatings with appropriate colors, finishes, and textures to most effectively blend the structures with the visible backdrop landscape. For structures that are visible from more than one sensitive viewing location, if backdrops are substantially different when viewed from different vantage points, the darker color shall be selected, because darker colors tend to blend into landscape backdrops more effectively than lighter colors, which may contrast and produce glare. At locations where a lattice steel tower or tubular steel pole would be silhouetted against the skyline, non-reflective, light gray colors shall be selected to blend with the sky.

SCE shall develop an SCE Structure Surface Treatment Plan for the lattice steel towers, tubular steel poles, and any other visible structures in consultation with a visual specialist designated by the CPUC, as appropriate, to ensure that the objectives of this measure are achieved. SCE shall submit the Structure Surface Treatment Plan to the CPUC for review and approval at least 90 days prior to the start of construction.

(This measure corresponds to Mitigation Measure 4.1-1a (CPUC 2010).)

EC VR-3: **Use Non-Specular and Non-Reflective Materials.** The transmission line conductors shall be non-specular and non-reflective, the insulators shall be non-reflective and non-refractive, and the lattice structures shall be non-reflective.

(This measure corresponds to Mitigation Measure 4.1-1b (CPUC 2010).)

Local Roadways and Private Residents

Views of the proposed alignment would also be available from local streets and a limited number of private residential roadways. Views would be similar to that represented by the visual simulation from SR-245 (Figure 15-6). While the proposed alignment would be visually prominent above the existing landscape features and citrus orchards, it would represent an incremental visual change to a landscape setting in which existing utility poles prominently appear along half the alignment. Visual impacts to local roadways and private residences of the proposed alignment would not require ECs and no significant adverse impact would occur.

Park and Recreation Areas

The Lewis Ranch Stallion Station is located at approximately 0.76 mile north of the transmission alignment and the Horse Corral Pack Station is approximately 0.57 mile south of the transmission alignment. Views of the proposed alignment area from the Lewis Ranch Stallion Station would be available when looking southerly, particularly when near SR-201. However, the nature of recreation at Lewis Ranch Stallion Station and Horse Corral Pack Station is such that recreational users would likely be moving throughout the area and therefore views would vary and be intermittent. Therefore, installation of a new transmission line would result in a weak visual contrast and would not dominate nor obstruct views from the recreation areas in the transmission line area and no significant adverse impact would occur.

Impact VIS-2: Create a new source of substantial light and glare that would adversely affect day or nighttime views in the HCP Permit Area.

<u>Construction</u>

Although most construction activities would be scheduled during daylight hours (7:00 a.m. to 5:00 p.m.), night construction is also anticipated. Night construction requires temporary lighting for security and safety at the transmission line facilities, including the staging areas and pull/tensions sites. Additionally, the proposed alignment could require nighttime construction work due to potential outage conditions resulting from the replacement of the existing Big Creek 1–Rector and Big Creek 2–Rector 220 kV transmission lines and installation of 15 double-circuit lattice towers and 140 double-circuit, tubular steel poles. Night lighting could potentially result in impacts to

visual resources by increasing ambient light to surrounding areas, creating distracting glare, and reducing sky or star visibility. Nearby land uses, including residences and businesses, provide some lighting of their own. However, a large portion of the proposed alignment would be located in a relatively undeveloped area with features that would result in increased lighting contrast when compared to the lighted areas of the developed areas. Therefore, nighttime lighting could have a potentially significant impact to nighttime views in the transmission line vicinity; however, this impact would be temporary due to the relatively short duration of construction (approximately 12 months), the fact that work in any one location would be of much shorter duration (i.e., on order of several days to two weeks), and that nighttime work would not be a routine occurrence. EC VR-4 is recommended to reduce impacts related to nighttime lighting.

Environmental Commitments

The following ECs are incorporated into the Covered Activities to reduce the effects on the human environment associated with implementing the proposed action. Implementation of the following EC would result in no significant adverse impact.

EC VR-4: Reduce construction night lighting impacts. SCE shall design and install all lighting at transmission line facilities, including construction and storage yards and staging areas, such that light bulbs and reflectors are not visible from public viewing areas; lighting does not cause reflected glare; and illumination of the transmission line facilities, vicinity, and nighttime sky is minimized. SCE shall submit a Construction Lighting Mitigation Plan to the CPUC for review and approval at least 90 days prior to the start of construction or the ordering of any exterior lighting fixtures or components, whichever comes first. SCE shall not order any exterior lighting fixtures or components until the Construction Lighting Mitigation Plan is approved by the CPUC. The plan shall include but is not limited to the following measures:

- Lighting shall be designed so exterior lighting is hooded, with lights directed downward or toward the area to be illuminated and so that backscatter to the nighttime sky is minimized. The design of the lighting shall be such that the luminescence or light sources are shielded to prevent light trespass outside the HCP Permit Area.
- All lighting shall be of minimum necessary brightness consistent with worker safety.
- High illumination areas not occupied on a continuous basis shall have switches or motion detectors to light the area only when occupied.

(This measure corresponds to Mitigation Measure 4.1-6 (CPUC 2010).)

Operation

The proposed action does not propose new lighting along the transmission line corridor. Additionally, the Federal Aviation Administration (FAA) does not require obstruction and warning lights on structures under 200 feet in height (FAA 2007), and the structures proposed as part of the Covered Activities would range from 120–160 feet in height. Therefore, no new sources of light would occur. However, the introduction of new poles/towers and overhead conductors where none currently exist could be a noticeable visual change as seen from some viewing locations during the daytime. The new poles would be treated in a non-reflective finish. The new lattice towers, new conductors, and new insulators would be a potentially reflective surface that could cause glare. This effect could result in the new facilities appearing visible or prominent. With implementation of EC VR-3, no significant adverse impact would occur.

Determination

Under the proposed HCP/permit action, no significant adverse effects would occur related to visual resources upon implementation of ECs VR-1 through VR-4. The proposed HCP/permit action would not adversely affect visual resources or contribute new light and glare during construction or operation. Therefore, this level of effect does not meet the identified thresholds of significance (VIS-1 through VIS-3) and is determined to be not significant or adverse by the Service.

Cumulative Effects of the Proposed Action

The effects of the proposed action, when considered with other projects in the region, could result in a cumulative impact to visual resources. The visual character of northwestern Tulare County is characterized by features typical of the San Joaquin Valley, including agricultural lands, grasslands, arid plains, orchards, oak savannah, vernal pools, valley sink scrub, saltbush, and freshwater marsh. In the resource study area, much of the historic native grassland, woodland, and wetland have been converted to farmland, as a result of the growth of agriculture in the San Joaquin Valley. Topography in the valley is uniformly flat; as a result, human-made features (including poles and lines for electricity and phones, blow off and air valves for underground water pipelines, residential and agricultural structures, fencing, elevated roadway, bridges, levees, canals, highway and local road signage, and other commercial signage) are visible in both near-field and far-field distances. Existing transmission lines, as well as other existing utility structures, are established features within the resource study area's landscape setting.

As a number of the projects shown on Figure 3-1, Cumulative Projects, are not yet in the environmental planning stage, the specific visual characteristics are not known. However, in general, most are development projects, which would result in a change of visual character on each project site, particularly for the sites that are currently vacant or used for agriculture. While the proposed alignment includes infrastructure that would be visible, the effects of such a project are

different than development of structures because the structures under the covered activities are not large continuous structures and therefore would allow views through and around them to the landscape behind them. However, typical development projects include large continuous structures which would block views more substantially than the proposed transmission line structures. The addition of power lines and associated infrastructure would not, therefore, contribute the same type of visual contrast as the proposed cumulative projects. Furthermore, each proposed project would be required to reduce potential visual impacts to the extent feasible. Therefore, the incremental contribution of visual contrast associated with the proposed action would not be cumulatively considerable, and would not result in a cumulative impact to visual resources.

15.4 REFERENCES CITED

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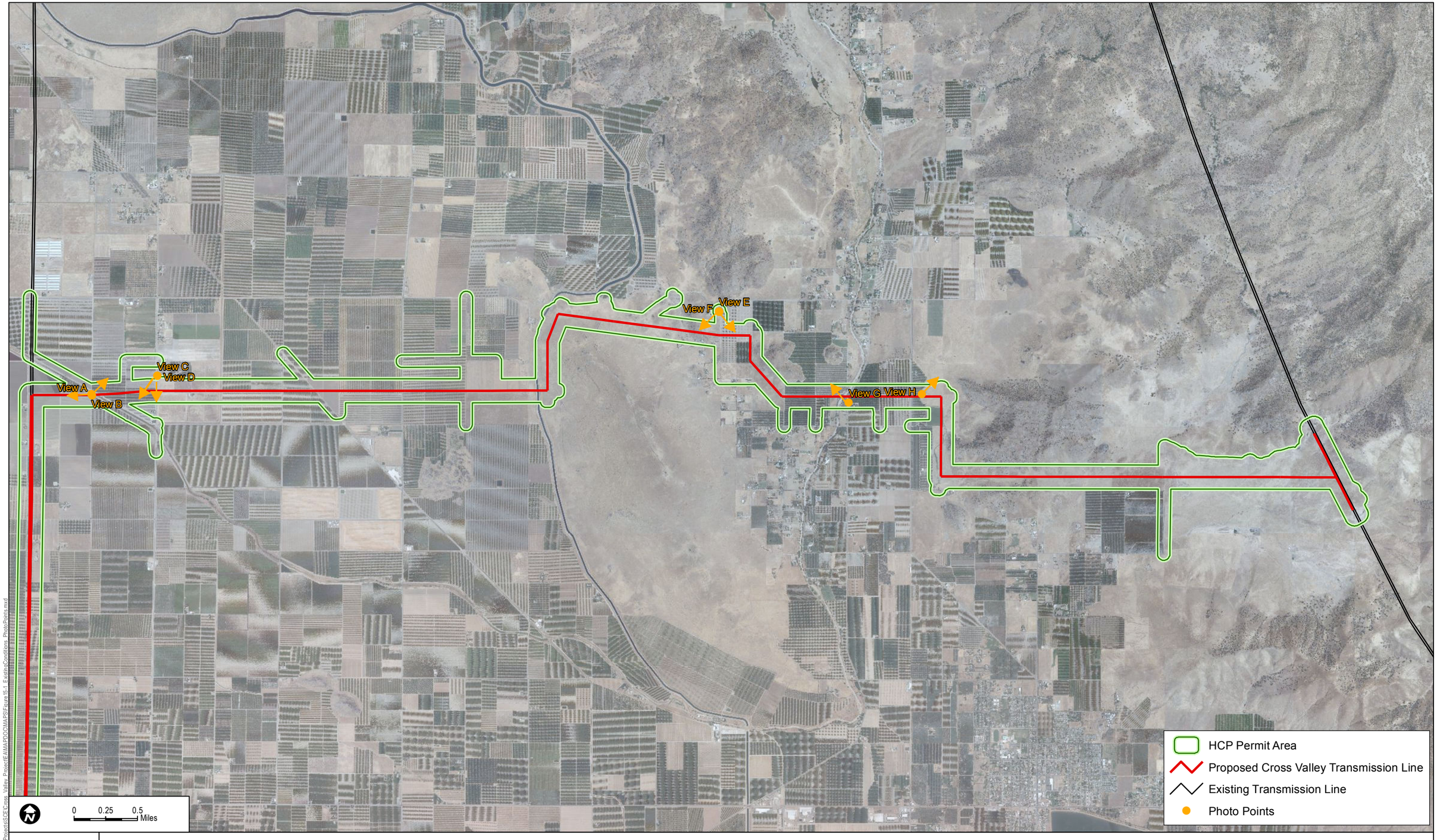

SOURCE: SCE 2013, NAIP 2010

FIGURE 15-1

Existing Conditions - Photo Point Locations

EA

CROSS VALLEY TRANSMISSION LINE HABITAT CONSERVATION PLAN ENVIRONMENTAL ASSESSMENT

Path: \\duda\efiles\GIS\Data\Projects\SCE\Cross_Valley_Project\EA\MAPDOC\MAPS\Figure 15-1_ExistingConditions_PhotoPoints.mxd

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View A: Facing west - looking towards where line turns

View B: Facing northeast - looking towards where line crosses over ditch

Path: \\dudek-files\GIS\Data\Projects\SCE\Cross_Valley_Project\EA\MAPDOC\MAPS\Figure 15-2_ExistingConditionsPhotos.mxd

EA

FIGURE 15-2

Existing Conditions - Photos

CROSS VALLEY TRANSMISSION LINE HABITAT CONSERVATION PLAN ENVIRONMENTAL ASSESSMENT

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View C: Facing south - looking towards where line crosses by Road 156

View D: Facing south southwest - where line will cross through existing orchard

EA

FIGURE 15-3

Existing Conditions - Photos

CROSS VALLEY TRANSMISSION LINE HABITAT CONSERVATION PLAN ENVIRONMENTAL ASSESSMENT

Path: \\duke-k-files\GIS\Data\Projects\SCE\Cross_Valley_Project\EA\MAPDOC\MAPS\Figure 15-3_ExistingConditionsPhotos.mxd

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View E: View from 201 (Echo Drive) facing south west towards where line crosses over mountain (looking towards structure 76)

View F: View from 201 (Echo Drive); facing south east towards where line traverses orchard and then turns south

EA

FIGURE 15-4

Existing Conditions - Photos

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View G: Facing northwest - looking towards where line will cross over creek

View H: Facing southeast- looking towards where line will turn and head south

Path: \\duded-files\GIS\Data\Projects\SCE\Cross_Valley_Project\EA\MAPDOC\MAPS\Figure 15-5_ExistingConditionsPhotos.mxd

EA

FIGURE 15-5

Existing Conditions - Photos

CROSS VALLEY TRANSMISSION LINE HABITAT CONSERVATION PLAN ENVIRONMENTAL ASSESSMENT

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Visual Simulation from Highway 245

Existing View from Highway 245

EA

FIGURE 15-6

View Simulation of the Proposed Alignment

CROSS VALLEY TRANSMISSION LINE HABITAT CONSERVATION PLAN ENVIRONMENTAL ASSESSMENT

Path: \\duke-k-files\GIS\Data\Projects\SCE\Cross_Valley_Project\EA\MAPDOC\MAPS\Figure 15-6_ViewSimulation.mxd

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